

19991206.qrp v01_n661.qrl.991206

Date: Mon, 6 Dec 1999 19:03:09 EST

From: qrp-l@Lehigh.EDU

To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>

Subject: QRP-L digest 1661

QRP-L Digest 1661

Topics covered in this issue include:

- 1) [57402] AL7FS throws in the towel
by Dan Robbins <kl7y@alaska.net>
- 2) [57403] Regens and Superregens: A look from the 40's to now
by wb2vuo@juno.com
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by "Ron Polityka" <wb3aal@talon.net>
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by "Francis Callahan" <colcal@srv.net>
- 5) [57406] ARCI K0FRP ruff score
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- 6) [57407] Re: STUPID PENCIL !..
by Brian <brian@iquest.net>
- 7) [57408] Re: O.T. website
by "Don Wines" <dwines@tyler.net>
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online.
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by "al dawkins" <alk0frp@earthlink.net>
- 11) [57412] QRP Contest Calendar CANCELED
by "Wilford D. Lindsey" <70511.3041@compuserve.com>
- 12) [57413] Re: Hawaii Schedule
by "Wilford D. Lindsey" <70511.3041@compuserve.com>
- 13) [57414] NJQRP Newsletter "QRP Homebrewer"
by "Chuck Adams K7Q0" <k7qo@primenet.com>
- 14) [57415] Re: 160m Vert. Dipole, Kite-flown
by "David Hurley,n2zhy" <n2zhy@amsat.org>
- 15) [57416] Fw: Re: O.T. website
by Bill H Ross <k6mgo@juno.com>
- 16) [57417] Re: logging nightmares
by Roy <marion@montana.com>
- 17) [57418] RE: QRP Homebrewer
by N10DL@aol.com
- 18) [57419] feeding dipoles with ladderline... also some tuner thoughts &
questions

- by Andy C Meng <andymeng@juno.com>
- 19) [57420] woo hoo!
by sergio <sruiz@bright.net>
- 20) [57421] Atomic thanks
by "Rich Dailey, KA80KH" <okh.npi@gte.net>
- 21) [57422] FS: Argonaut 515, P/S and Filters
by Jim Lowman <jmlowman@ix.netcom.com>
- 22) [57423] WTB: DSW-40
by "Tim Cook" <timcook@erinet.com>
- 23) [57424] WE6W's QRQ Net -- WOW!!!
by BenNW7DX@aol.com
- 24) [57425] Re: Atomic clock info agn?
by "Michael A. Newell" <wb4huc@texas.net>
- 25) [57426] Re: CQWW: 9G5AA
by N7YA@aol.com
- 26) [57427] HELP: Fw: logging nightmares
by "Walt Amos" <waltamos@surfree.com>
- 27) [57428] Re:The Actual Message sent to all U.S. Amateurs on Dec. 7, 1941, as received by W9PRS.
by "Ian C. Purdie VK2TIP" <ianpurdie@integritynet.com.au>
- 28) [57429] RE: feeding dipoles with ladderline
by aweiss@usd.edu (Ade Weiss W0RSP)
- 29) [57430] Re: feeding dipoles with ladderline... also some tuner thoughts & questions
by "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
- 30) [57431] Re: feeding dipoles with ladderline... also some tuner thoughts & questions
by Charles Greene <cgreene@loa.com>
- 31) [57432] Re: feeding dipoles with ladderline... also some tuner thoughts & questions
by "T. E. 'Doc' Drake" <w5tb@SoftHome.net>
- 32) [57433] Re: circuit help needed -brain not working
by Greg Weinfurtner <weinfurt@oak.cats.ohiou.edu>
- 33) [57434] RE: Air Variable Cap kits?...
by Karl Kanalz <KKanalz@excel.com>
- 34) [57435] RE: Need source for Matchbox swr coupler plugs
by Karl Kanalz <KKanalz@excel.com>
- 35) [57436] cw filters
by Kleibe Jacinto de Araujo <kleibe@anatel.gov.br>
- 36) [57437] CONTEST: Electronic submission question
by Bill B Lazure <n2tpa@juno.com>
- 37) [57438] Re: FS: QRP Radio and Accessories
by "Tedd Wong" <wong_te@hotmail.com>
- 38) [57439] Re: CONTEST: Electronic submission question
by Monte Stark <ku7y@dri.edu>
- 39) [57440] Stand-alone Code Readers
by Derek Brown <DBrown@RFMD.com>
- 40) [57441] Re: Stand-alone Code Readers

- by Monte Stark <ku7y@dri.edu>
- 41) [57442] Re: CONTEST: Electronic submission question
by "Tom Hybiske" <hybiske@generalatronics.com>
- 42) [57443] RE: Stand-alone Code Readers
by Karl Kanalz <KKanalz@excel.com>
- 43) [57444] Re: Small Wonder Labs DSW rigs
by Bruce Grubbs N7CEE <n7cee@arrl.net>
- 44) [57445] Re: NJQRP Newsletter "QRP Homebrewer"
by Bruce Grubbs N7CEE <n7cee@arrl.net>
- 45) [57446] DSW-40 and paddles
by "Dan W. Dooley" <dandooley@pipeline.com>
- 46) [57447] oscilloscope primer, contest fun, MFJ CUB?
by tom whalen <wb5qyt@eFortress.com>
- 47) [57448] Re: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr
by "Barry L. Geipel - AD6HR" <bgeipel@primenet.com>
- 48) [57449] Contest: K7RE Correcyed ARCI Holiday Sprint Results
by Brian Kassel <bkassel@dancris.com>
- 49) [57450] N4BP Holiday Sprint With K2
by Bob Patten <n4bp@bc.seflin.org>
- 50) [57451] N4BP & K2 in ARRL 160
by Bob Patten <n4bp@bc.seflin.org>
- 51) [57452] Info found
by tom whalen <wb5qyt@eFortress.com>
- 52) [57453] Re: 2N2/40 gets "Hearing Aids"
by "Arthur G. Silvers" <ags@ieee.org>
- 53) [57454] Fox: KV2X Final Announcement.
by Thomas Jennings <jennings@eng14.rochny.uspra.abb.com>
- 54) [57455] Re: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr
by Michael Neverdosky <mneverdosky@earthlink.net>
- 55) [57456] FOX: KF4AR Fox Announcement 12/09 UTC
by "Richard E. Robinson" <rerobins@email.uncc.edu>
- 56) [57457] QRP-L O-scope tutorial
by "Paul Harden, NA5N" <na5n@rt66.com>
- 57) [57458] SCOPE-1
by "Paul Harden, NA5N" <na5n@rt66.com>
- 58) [57459] SCOPE-2
by "Paul Harden, NA5N" <na5n@rt66.com>
- 59) [57460] SCOPE-3
by "Paul Harden, NA5N" <na5n@rt66.com>
- 60) [57461] SCOPE-4
by "Paul Harden, NA5N" <na5n@rt66.com>
- 61) [57462] HB:Antenna advice needed
by Rod J Johnson <ka7you@juno.com>
- 62) [57463] Hiram Percy Maxim celebration
by JFStrain@aol.com
- 63) [57464] HB: Preparing for CW mod to HTX10 RS 10 m xcvr
by Jim Giammanco <giamman@rouge.phys.lsu.edu>
- 64) [57465] Re: Cushcraft good news/bad news venting

by Russ Hines <radioruss@fuse.net>
65) [57466] Re: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr
by zmola@campbellsci.com
66) [57467] QRP Net reports.
by Ed Loranger <we6w@qsl.net>
67) [57468] Re: circuit help needed -brain not working (VERY LONG BUT
INSTRUCTIONAL)
by "muleskiner" <muleskiner@gateway.net>
68) [57469] RS Satellites
by NCC3122B@aol.com
69) [57470] Re: CONTEST: Electronic submission question
by Larry Cahoon <wd3p@juno.com>
70) [57471] FS: Sierra and NC-20
by "Mike Newbold" <newbold@cmn.net>
71) [57472] Re: feeding dipoles with ladderline... also some tuner thoughts &
questions
by NB6M@aol.com

Date: Mon, 06 Dec 1999 00:21:16 +0000
From: Dan Robbins <kl7y@alaska.net>
To: qrp-l@lehigh.edu
Subject: [57402] AL7FS throws in the towel
Message-ID: <384B017C.BC3ED4E0@alaska.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Conditions were ok (Dan, KL7Y, suggests that they "sucked") but not great. I am heading home early and will not be on 30 or 40 meters. It was great to hear KL7GN, Gordon, on the there today making contacts.

Sorry for bailing out on 40 meters but my attitude needs adjusting and I am starting the drive home.

Take care,

73, Jim,
AL7FS

Date: Sun, 5 Dec 1999 19:16:46 -0500
From: wb2vuo@juno.com
To: qrp-l@lehigh.edu
Subject: [57403] Regens and Superregens: A look from the 40's to now

Message-ID: <19991205.192604.-72551.0.wb2vuo@juno.com>

MIME-Version: 1.0

Content-Type: text/plain

Content-Transfer-Encoding: 7bit

First off, I was NOT licensed in the 40's, in fact I was not here in the 40's, but I do have Handbooks from that era, and my Elmer(s) were licensed in the 30's and earlier.

The regenerative and superregenerative receiver were both used from the 20's on up in the amateur circles, and received both plaudits and brickbats. The regenerative detector is simple to use, provides good sensitivity and is (relatively) easy to build. However, the point at which the detector would oscillate was frequency, voltage and proximity-sensitive. Also, the detector would radiate broadband noise and re-radiate the received signal.

The superregenerative detector was a vast improvement, with the point at which it oscillated being much more stable, the sensitivity was/is better and because of the quench oscillator, the hand-capacity and proximity effects are reduced. However, it STILL radiates broadband noise and will re-radiate the received signal.

Despite these shortcomings, there were a number of beginners receivers of both types, and with the advent of VHF activity in the 30's the simplicity won out. A broadband phone signal, usually a modulated oscillator, sounded great on a superregenny! Many "rushboxes" were built and used, and one of the most famous lines of AM transceivers, the Benton Harbor Lunchbox for 10 - 2 Meters were a fixture from the late 50's into the early 70's. These were commonly called the "Tenner", the "Sixer" and the "Twoer". A number of projects in QST, the ARRL Handbook and the ARRL Mobile Manual used a superregenny for VHF mobile and portable, and even a 420 Mc transceiver using Nuvistors and germanium transistors was printed.

For the HF range, the "Novice Special" from Tom, W1TS was in "Introduction to Amateur Radio" and in "Understanding Amateur Radio", and outperformed the low-end superhets hands down. I don't have a copy of either of the books right now, but it was a 2-tube superregenerative receiver with a couple of receive-type pentodes (6AQ5's?) in a Bud box about 5" x 7" x 4", and had a main tuning and bandspread tuning cap, volume control and the regeneration control. Plug-in coils rounded out the package. There were also basic receivers, superhets with a superregenn "IF" and a single-conversion front end for 80 & 40M typically. By selecting an IF frequency of 1750 Kc, a single oscillator in the 5.2 Mc range allowed tuning both bands without a bandswitch. A preselector (tunable RF amp) was used to choose the band desired. This method also allowed the builder to "improve" the RX in the future, adding a fancier IF strip, Xtal filter, product detector, etc...

The recent article in QST about a regen and Xtal-control was great, and the TX in the article is in the 1947 (and others) ARRL Handbook. I built one for my Novice rig in 1966 and then "improved" the station to a Johnson Viking Adventurer. I did not have a homebrew RX though, I used a Hallicrafters SX-25 (5 yearsolder than me, and a super RX!) There's a goldmine of ideas out there in the older publications, QST/CQ/73 and the RCA Ham Tips.

I have not yet started into a new rushbox, but it looks like the winter project that I have been looking for. Maybe a solid-state version of the 80/40M "Misers Dream" or the HBR...

72/73, Keith, WB2VU0, 100% QRP from the Depths of the Great Bergen Swamp
My night light runs more power than my Rig!!!

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Date: Sun, 5 Dec 1999 19:25:50 -0500
From: "Ron Polityka" <wb3aal@talon.net>
To: ". QRP-L" <qrp-l@Lehigh.EDU>
Subject: [57404] QRP Contest Calendar CANCELED
Message-ID: <00eb01bf3f80\$73b886e0\$90e508cf@wb3aal>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Hello Everyone,

Well due to very low interest in the contest calendar
and computer melt down the

QRP Contest Calendar is CANCELED.

Anyone who sent me a check will be receiving one
in the mail with in the week.

We only had 35 orders for the calendar. We needed
around 200 orders to cover the cost.

Sorry folks but I was not going to loose any money on this
venture. The way it is now I am loosing money with writing

out return checks and postage for mailing them back. But
that is business.

Have a Safe & Happy Holidays!!

72 & 73
Good DXing

Ron Polityka
de WB3AAL
wb3aal@talon.net

vvv Eastern Pennsylvania QRP Web Page vvv
http://www.kpsnet.com/wb3aal/Start_Page.htm
Eastern Pennsylvania QRP Club Call --> N3EPA

EPA QRP #1	NJ QRP #179
KL7 QRP # 309	G-QRP # 3031
ARCI QRP # 5318	10 - X #13173
NorCal	Zombie #625
ARS # 380	HI-QRP #153
VA QRP Society	

SETI @ Home Project
<http://setiathome.ssl.berkeley.edu>
100 + Work Units Completed

Date: Sun, 5 Dec 1999 17:56:01 -0700
From: "Francis Callahan" <colcal@srv.net>
To: <n7kt@earthlink.net>, "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [57405] Re: Congratulations to KI7MN
Message-ID: <000b01bf3f84\$ab47b6e0\$08de070c@callahan>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Congrats from KF7ET Cal Idaho
----- Original Message -----
From: "Roger Hightower" <n7kt@earthlink.net>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Sent: Sunday, December 05, 1999 5:15 AM
Subject: Congratulations to KI7MN

> Well, he isn't going to say anything about it, so I will.
>
> KI7MN, Bob, passed the 20wpm code test yesterday at the Superstition
> Hamfest. Good job!
>
> I knew he could do it...he's my bro.
> --
> 73, de Roger, N7KT
> qrp-1 #62, NorCal #1099, Zombie #006
> Mesa, AZ 85202
>

Date: Tue, 7 Dec 1999 04:56:17 -0700
From: "al dawkins" <alk0frp@earthlink.net>
To: <qrp-1@lehigh.edu>
Subject: [57406] ARCI K0FRP ruff score
Message-ID: <002601bf40aa\$134b8e80\$bc0ff5d1@default>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Watched the Bronco's loose to the Chiefs again and ran the ARCI HB sprint.
Ran the Sierra on 40/20 but no modules for 10/15 The TS-850 was on 10/15m

Paper logged so only a good calculated guess on the score.

band	q's	spc's
10	41	16
15	44	26
20	27	15
40	21	14
	133	71

622 QSO points 71 SPC's
950 mw power
441,620 points plus 10,000 HB points two bands
451,620
all 4 hours mostly 10/15m
20/ 40 was the last hour and a half.

Worked Jim AL7FS and HP1AC twice
Jim calls me off the back of the beam and I hear the FS and I rotate ,
unless its on 20m where the 4 el is east and the tribander west. The 6's and
7's may notice a big increase when I come back on the west tribander.

Still no KT-34XA, its laying in the bushes in the back yard, with all the elements not mounted. It takes up my whole back yard when assembled. When it goes up I'll have one tribander east and the other west. A warm spell or spring ?????

Good Job guys, Fun sprint.
AL K0FRP

Date: Sun, 05 Dec 1999 19:56:38 -0500
From: Brian <brian@iquest.net>
To: Macstein@aol.com
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [57407] Re: STUPID PENCIL !..
Message-ID: <384B09C6.559E6955@iquest.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Yes indeed....WAY TO GO WOOHOO!

What am I waiting for?

72

Macstein@aol.com wrote:

>
> In a message dated 12/05/99 2:23:57 PM EST, renglewb8uoj@juno.com writes:
>
> > Bob WB8UOJ /AE WOO HOO !!!
>
> 'Tis the season to get that upgrade! My buddy Bob WB8UOJ, who just got his
> old Gary Breed Transciever working earlier this year and got active QRP...
> has passed his Extra! Congratulations to all who are doing this -- but
> especially to my friend, "WOO HOO" BOB! Way to go!
>
> -MAC-
> AF4PS

--

=====
KB9BVN -NORCAL #2792 FISTS #5695 QRP-L #1540
39.558 N 86.095 W Johnson Co., Indiana

GRID: EM69WN - Ten Tec Scout - Attic Dipole - 5w
Proud to be a member of the American Radio Relay League
Foxhunting Team UNDERDOG - Underdog #4
FISTS Century Club #764 - FISTS QRP Century Club #24
=====

Date: Sun, 5 Dec 1999 19:06:02 -0600
From: "Don Wines" <dwines@tyler.net>
To: "QRP-L LIST" <qrp-l@lehigh.edu>
Subject: [57408] Re: O.T. website
Message-ID: <003701bf3f86\$115c6a60\$6e9086d0@oemcomputer>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

> I had a website in my list of favorites that was the most complete site I
> have ever seen.
> Bill, K6MGO

Bill,

Try <http://www.ac6v.com> . It's loaded with good stuff!

Don, K5DW
k5dw@arrl.net

Date: Sun, 5 Dec 1999 17:17:55 -0800
From: "Dave Willey" <kd6kwm@mindspring.com>
To: "QRP-L" <qrp-l@Lehigh.EDU>
Cc: <w4qo@amsat.org>
Subject: [57409] RE: Resistor Label files for setting up a resistor "safe", now
online.
Message-ID: <001801bf3f87\$bafad9c0\$7cceaec7@Dave>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Hi All,

Several of the list member have requested copies of the resistor labels (WORD97) files that were setup by me on Avery label stock. They cover all of the common resistor values listed in the DigiKey catalog.

Jim N5IB has placed them on his (very nice) website for D/Ling for anyone to use. (Thanks Jim!)

<http://www.qsl.net/n5ib>

Enjoy,

de Dave Willey - KD6KWM

> After having the world's largest resistor junk box, I got sick 'n-
> tired of hunting for the specific values of resistors. I'd been
> threatening to sort them for years. So after wasting a zillions
> of hours hunting for a specific 2 cent resistor value I finally
> did some sorting.

> I have made up (3) WORD97 files, formatted for the "AVERY
> STANDARD, 5267 MINI RETURN ADDRESS" labels. (Size
> of each label is .5" high X 1.75" long. 80 labels per sheet.)
> All 3 files (total) have a complete list of Digi-Key's 1/4 W
> resistor values (well, as of about four catalogs ago anyway.)

> These labels are the right size for putting on the front of those
> (hobby) plastic parts drawers. I'm sure we have all seen
> various types, 25/30/50 or more plastic pull out drawers in
> a case. Or they can just be put on various sized paper
> envelopes if that is the way you file parts (or should file your
> parts).

> On the last file there are several pre-formatted labels with
> the value left off for those non-standard resistor values.
> I can just write the value in by hand as needed. Most
> major office supply/warehouses carry this label stock,
> which by the way is made for laser printers.

> Gave me an excuse to order up both sets of 1/4W resistor
> kits Digi-Key offers, (5 per value), and find a new home for
> my "resistor box" with a new ham.

Date: Sun, 05 Dec 1999 15:36:05 -0700
From: Brian Kassel <bkassel@dancris.com>
To: QRP-L <QRP-L@lehigh.edu>
Subject: [57410] Contest: K7RE ARCI Holiday Sprint Results
Message-ID: <384AE8D5.79CFD21D@dancris.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Wow, what fun!

High points included working KL7GN on 10, 15 and 20, along with good old Jim, AL7FS on 20.

I used my K-2 at 4.7W. to a 3 el triband beam up 35 ft., and ran all 4 hours. No operation on 40 or 80 as my power line noise problem has not yet been repaired. The noise even hurt a bit on 20M, especially to the north east, which is the direction of the noise from my AZ QTH. Sorry if I missed a few folks on 20 because of that problem.

Raw Totals:

71 QSO's
313 QSO points
33 SPC's
X7 Power multiplier

72,303 total score

Brian K7RE

Date: Tue, 7 Dec 1999 05:23:19 -0700
From: "al dawkins" <alk0frp@earthlink.net>
To: <qrp-l@lehigh.edu>
Subject: [57411] ARRL 160m K0FRP
Message-ID: <003c01bf40ad\$d9fcb380\$bc0ff5d1@default>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Played a bit but due to the storm I was unable to get my sloper stretched out two lots down the block.

I used My 80m loop end fed through the tuner Friday nite.
Saturday I shoot a line over the pine tree and got the sloper back up.
Boy its tough QRP on 160m. Stations had to be S-9 plus before they heard me. Only 46 q's.
I NEED 2- 3 Elements on this band HA HA. Any body have 4- 100 foot towers 300 feet apart, for a wire beam.
Condx were not good or my antenna couldn't hear. East of MO or IL about 1100-1200 miles out. I always hear east to MA or CT but nothing this year.

Al K0FRP

Date: Sun, 5 Dec 1999 21:05:33 -0500
From: "Wilford D. Lindsey" <70511.3041@compuserve.com>
To: "INTERNET:wb3aal@talon.net" <wb3aal@talon.net>
Cc: "W.D.(Doc)Lindsey/K0EVZ" <70511.3041@compuserve.com>, QRP-L Discussion Group <QRP-L@Lehigh.edu>
Subject: [57412] QRP Contest Calendar CANCELED
Message-ID: <199912052109_MC2-8FDB-D2E9@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit
Content-Type: text/plain;
charset=us-ascii
Content-Disposition: inline

Ron:

Too bad....because I mentioned your club project in the upcoming Clubhouse column in QQ. Included costs, ordering details, etc. Nuts. Sure would like to have had this calendar. Well maybe some other time :-).

72,
--Doc Lindsey/K0EVZ
DSBF
PO BOX 6028
Bismarck, ND 58506
K0EVZ@arrl.net

Date: Sun, 5 Dec 1999 21:05:31 -0500
From: "Wilford D. Lindsey" <70511.3041@compuserve.com>
To: Dean W Manley <kh6b@juno.com>
Cc: "W.D.(Doc)Lindsey/K0EVZ" <70511.3041@compuserve.com>, QRP-L Discussion Group

<QRP-L@Lehigh.edu>
Subject: [57413] Re: Hawaii Schedule
Message-ID: <199912052108_MC2-8FDB-D2E6@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit
Content-Type: text/plain;
charset=us-ascii
Content-Disposition: inline

Dean:

Well we got our QSO in today, by gollies. Sure was surprised and pleased to hear you calling me on 14.060. Too bad it wasn't during the contest. But I'll take 'em where I can get 'em :-). Also worked AL7FS, HP1AC and KL7GN during the contest. Setup was K2 at 5 watts to a brand new GAP Titan DX antenna with its base at 12'.

72,

--Doc Lindsey/K0EVZ
DSBF
PO BOX 6028
Bismarck, ND 58506
K0EVZ@arrl.net

Date: Mon, 6 Dec 1999 02:42:51 -0600
From: "Chuck Adams K7Q0" <k7qo@primenet.com>
To: qrp-l@lehigh.edu
Subject: [57414] NJQRP Newsletter "QRP Homebrewer"
Message-ID: <199912060242.TAA20006@smtp05.primenet.com>
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT

Gang,

Some of you have been dragging your feet and you are about to make a serious mistake IMHO.

The New Jersey QRP Club, NJQRP, has already printed one issue of "QRP Homebrewer" which has been reviewed already in previous postings by others. The first issue contained 64 pages including cover and back cover used for mailing labels.

It is the standard size that QRPP pub is and the number of pages that QRPP has pretty much standardized on, so you will be getting your monies worth.

Subscriptions are a measely \$15 for US subs per year sent to

George Heron, N2APB
2419 Feather Mae Ct.
Forest Hill, MD 21050

n2apb@amsat.org

Make checks or MO to George, not the NJQRP. Otherwise you'll get your check back and miss some issues in the process. Instructions are important don't you know.

Now, why this posting? If you do not subscribe pretty darn quick you will miss issue number 2. Number 2 is going to have a detailed article on a very important topic, which George can announce if he so wishes. I'm thinking that if you have to ask then you are being too selective in QRP material. :-)

And I think, but George will have to clarify this for me and you, that if enough people will let him know and put up the \$15 for a one year sub right this month he can reprint copies of #1 for the new kids on the block. I know that it is that time of year when the holiday season and travel and other expenses mount up, but consider the \$15 your present to yourself for something that you can use all year. It's a gift that keeps on giving day after day if you are like me and read and reread books and newsletters.

The clock is ticking on this one group. And it is important enough that I posted on the topic. My one posting for this month.

FYI

Chuck Adams K7QO K7QO@hotmail.com <http://www.qsl.net/k7qo/>

Date: Mon, 06 Dec 1999 02:43:47 +0000
From: "David Hurley,n2zhy" <n2zhy@amsat.org>
To: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [57415] Re: 160m Vert. Dipole, Kite-flown
Message-ID: <384B22E3.3C08C651@amsat.org>
MIME-Version: 1.0

Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Now we know what happened to the Mars Polar Lander!

David,n2zhy
Princeton,NJ

S LYON wrote:

> On Saturday, at WE2Q's place on a hill in the woods, we lofted one of my
> 9' X 11' Scott Sleds to maybe 700' and hung a center-fed (ladder line)
> 256' dipole from it, bottom between 20 and 50' off the ground.

Date: Sun, 5 Dec 1999 18:43:48 -0800
From: Bill H Ross <k6mgo@juno.com>
To: qrp-1@Lehigh.EDU
Subject: [57416] Fw: Re: O.T. website
Message-ID: <19991205.184348.-389595.0.k6mgo@juno.com>
MIME-Version: 1.0
Content-Type: text/plain
Content-Transfer-Encoding: 7bit

Yes, it was
www.ac6v.com
Thanks to all who sent in a response to my request.
Also good is "www.k1dwu.net
Thanks again,
73/72
Bill, K6mgo

> I had a website in my list of favorites that was the most complete site
I
> have ever seen.
> Bill, K6MGO

Try <http://www.ac6v.com> . It's loaded with good stuff

Date: Sun, 05 Dec 1999 07:54:32 -0700

From: Roy <marion@montana.com>
To: Monte Stark <ku7y@dri.edu>
Cc: <qrp-1@Lehigh.EDU>
Subject: [57417] Re: logging nightmares
Message-ID: <199912060253.TAA02575@mail.montana.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 02:56 PM 12/5/99 -0800, you wrote:

>Hi Roy,
>
>Any computer program can drive you nuts!
>I make these directories:

I think you are correct. About the directories, not about being nuts ;)
Its was the first time I used TR and I think they should include that in
the manual. Set up some directories FIRST. I managed to capture print the
log from control L and save it. I typed some test OSOs and tried it again
and it made those files. I still don't have it saving to the floppy though.
It worked good for the contest, but saving and making the log bombed on me.
It said it created those files, but the computer nor I can find them. It
could of been a stupid moment on my part, but I think I will blame it on
the program. Tnx much, Roy AB7CE

Date: Sun, 5 Dec 1999 22:12:27 EST
From: N10DL@aol.com
To: qrp-1@lehigh.edu
Subject: [57418] RE: QRP Homebrewer
Message-ID: <0.583628f6.257c839b@aol.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit

I also agree, the first issue had tons of very useful information. Can't wait
to see how they top it in the next issue. Great job, and a great bunch of
people.

Aron
N10DL
NJQRP#133
FISTS#4110
Bedford, NH

Date: Sun, 5 Dec 1999 22:23:24 +0000

From: Andy C Meng <andymeng@juno.com>
To: qrp-1@lehigh.edu
Subject: [57419] feeding dipoles with ladderline... also some tuner thoughts & questions
Message-ID: <19991205.222351.-496655.0.andymeng@juno.com>
MIME-Version: 1.0
Content-Type: text/plain
Content-Transfer-Encoding: 7bit

Hi all,

This weekend I purchased 100 ft. of 450 ohm ladderline, and I want to feed my dipole with it, so I can make it easy to tune on all bands, and have a bit less loss. I am confused on a few things, though. First of all, all of the information I have seen on this subject says to connect the ladderline directly to the dipole. I don't see why this is possible, since a resonant dipole's impedance is about 50 ohms. This is a 9:1 impedance ratio AT THE ANTENNA FEEDPOINT, and wouldn't a LOT of power be lost on transmit AND receive? It seems to me that there should be a transformer at the antenna feedpoint to match this? Actually, I guess ladderline would only be good for antenna systems with a tuner, because with a resonant antenna you would need 9:1 impedance transformers on each end of the line. I guess 50 ohm coax would be best for a resonant system (I'm thinking as I go).

Secondly, how important is it to run the line >2-3" away from metal? How can impedance be measured to see what happens when the line is close to metal or under other conditions?

On the antenna tuner side of things, it seems that the place an antenna tuner should be is at the antenna feedpoint. Otherwise, the impedance mismatches between the antenna and transmission line will lose a lot of power, especially as you tune farther and farther away from the resonant frequency. You could lose a lot of power before it ever got to the radio (on receive) or to the antenna (on transmit). So all the antenna tuner does is make the radio happy by resonating the antenna and ground system (although that's advantageous on receive).

Obviously, practicality is a big issue here, but now my dad and I are working on designing an antenna tuner using the Smith Chart, and figuring out what component values are needed to bring the antenna to 50 ohms. What i would love to do is put motors on the L's and C's and make it controllable from the shack (yeah, I know, you're thinking Z-11, but price and learning factor must be considered, besides, I have fun tuning antennas :-). I think it would be neat to build and use, maybe even hook it up to the computer and write a control program for it, SWR indicated and all. Enough rambling on that...

My Juno email is still hardly receiving any messages, so please reply to the list (I can look on the Internet) or direct to: kc8kfi@yahoo.com If you send it to my Juno account I probably won't get it.

Oh, i operated in the sprint a bit today (actually quite a bit!) but I only made 6 contacts. Then what really dissapointed me was when I forgot to turn the power down for the last 2 Q's, so it was 100+ Watts... 1X mult :-(40M, 20M, and 15M (first Q's on 15 ever...) The stations were all on top of each other, I don't think we should feel that we need to keep it in 5-10KHz... I am using an FT-101 which has pretty wide CW filters and only dream of a 599zx :-). Maybe it's just the rig and I shouldn't be complaining. I guess I need to make a SCAF or something...

It's getting late and I have to get to bed.

Andy KC8KFI

Cincinnati, OH SWORDS FPQRP #8 NORCAL QRP-ARCI #10085 QRP-L #1813

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Date: Sun, 05 Dec 1999 22:27:54 -0500
From: sergio <sruiz@bright.net>
To: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>

Subject: [57420] woo hoo!
Message-ID: <384B2D3A.DEB9B40D@bright.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

another contact.. .. glen in tilton, ar.. he gave me a 339, but said
everything sounded great.. just a weak signal.. that was too cool!

i need to get my code speed back up, though.. which means finding people
who are willing to qrs... woo hoo!

thanks, everyone for all your help...

now, i am gonna try all these foxy type things and sprints, and stuff..

i missed arci hb contest, cuz i had unexpected company.. but, hey! that
was fun, too..

--

peace,
sergio
<http://www.bright.net/~sruiz> - "the village buzz"
"quoting other people is really lame and unoriginal..." -sergio

Date: Mon, 06 Dec 1999 03:39:52 -0500
From: "Rich Dailey, KA80KH" <okh.npi@gte.net>
To: qrp-l@lehigh.edu
Subject: [57421] Atomic thanks
Message-ID: <3.0.16.19991206021500.2f6f9f56@mail.gte.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Thanks to all who provided info on atomic clocks.

Happy Holidays,
Rich & Phyllis
KA80KH/KB4NPI

Rich Dailey, KA80KH <okh.npi@gte.net>
The KB4NPI/KA80KH Web <<http://home1.gte.net/web22jfw/index.htm>>
Happy Holidays!

Date: Sun, 05 Dec 1999 19:56:05 -0800
From: Jim Lowman <jmlowman@ix.netcom.com>
To: qrp-1@lehigh.edu, tentec@contesting.com
Subject: [57422] FS: Argonaut 515, P/S and Filters
Message-ID: <384B33D5.33295A32@ix.netcom.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Gang,

After much consideration, I have decided to sell my Ten-Tec Argonaut 515, power supply and notch/CW filter.

The 515 has S/N 515-0229, but the 208-A notch/CW filter and the 210 P/S appear not to have S/Ns.

Both the P/S and the notch/CW filter match the 515 case (black).

Original manual for the 515 will be included.

Cosmetic condition is easily a 9/10 on all three items; no scratches, nicks, dings or the like. Electronics are in excellent working condition, with the exception that the dial cord/bungee cord need to be replaced. I will include both with the sale; just don't have the time to do repairs.

I would like to get \$550 for all three items, plus shipping. Preference given to buyer who buys the lot. I'll spring for professional packing.

Reason for selling: too many rigs. I have the K2 and Sierra kits, Argo 556 with all band modules, QRP Plus, Red Hot 40 kit and an Omni VI Plus. Also want to buy a Pegasus, but will do so whether I sell the 515 or not.

72/73 de Jim - AD6CW

Date: Sun, 5 Dec 1999 23:08:16 -0500
From: "Tim Cook" <timcook@erinet.com>
To: "QRP" <qrp-1@lehigh.edu>

Subject: [57423] WTB: DSW-40
Message-ID: <02e201bf3f9f\$86a25a00\$83775acf@erinet.com>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Looking for a built DSW-40....email with particulars if you have one and are moving on to something else.

thanks

Tim

NZ8J

Date: Sun, 5 Dec 1999 23:16:09 EST
From: BenNW7DX@aol.com
To: qrp-1@lehigh.edu
Subject: [57424] WE6W's QRQ Net -- WOW!!!
Message-ID: <0.ad4051cc.257c9289@aol.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: quoted-printable

Hey Guys,

I'm just reminding you that every Sunday Evening on 40 meters, WE6W is=20 NCS for the Norcal Net and also the QRQ NET.

My fingers are Still energized and can do more, but my paddles are in=20 disagreement :) In the QRQ Net, we had 4 checkings (including Ed) and then=

=20 Ed sent 3 different sentences first at a slow speed, then turned it to a=20 round table and each new person in line brought the speed up as they sent th=

e=20 3 sentences. Unfortunately, we had 2 people that suddenly *dissappeared* so=

=20 it was then down to just little me (NW7DX) and big Ed (WE6W)... A=20 Showdown!!! :) Back and forth, the sentences would be sent...faster...and=

=20 faster...and faster.. untill.... We had reached the Peak! We got alittle=20 above 40wpm but then it was just plain Funny trying to hear eachother send=20 the words. I had a bit of advantage over Ed, just because I had been a couc=

h=20 potato the whole day and hadn't done anything with my hands during the day,=20 whereas Ed did work during the day with his hands, so they were a bit tired=20 for him, but I was still Energized. :)

I Strongly urge everyone that has some spare time on Sunday Evening 6pm=20 Pacific Time (0200z) to get on the air (=B17.045) and test your fingers! Yo=

u=20

will be surprised at what they know!

73 es have a nice week,

Ben - NW7DX

Redmond, WA

Date: Sun, 05 Dec 1999 22:25:04 -0600
From: "Michael A. Newell" <wb4huc@texas.net>
To: okh.npi@gte.net
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [57425] Re: Atomic clock info agn?
Message-ID: <384B3AA0.D3BA26D9@texas.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

"Rich Dailey, KA8OKH" wrote:

>
> Could someone help me find the tech info on the
> web regarding www sync'ed clocks?
>

Here's one that looks interesting, although it's
not battery operated.

<http://www.brgproducts.com/arc17.html>

I also saw this clock listed on a department store
web site (Sears, Pennys, or Montgomery Ward, I
don't remember which one) for \$10 less than
BRG's price.

Also, I worked DL1RTM today (Sunday) at 1509Z
using 5 watts and a trap vertical. This QRP
business is sho' nuff fun!!

--
Michael A. Newell - WB4HUC
Austin, TX
QRP-L 1668
FISTS 6745
<http://wb4huc.home.texas.net/>

Date: Sun, 5 Dec 1999 23:31:43 EST
From: N7YA@aol.com
To: qrp-1@lehigh.edu
Subject: [57426] Re: CQWW: 9G5AA
Message-ID: <0.65badaf3.257c962f@aol.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit

In a message dated 11/29/99 4:36:28 PM Pacific Standard Time, ae2t@arrl.net writes:

<< also noticed the good operators at 9G5AA. Not sure who they were (I'm sure it's out there somewhere on the web in the DX news) but they certainly were experienced DX/contest ops. >>

It was none other than the world famous Voodoo Contesters! The big sigs behind 5V7A and many others...i got them as a new one too and was buzzing from that one! and they are among the worlds best!

73...Adam, N7YA

Date: Mon, 6 Dec 1999 05:15:12 -0000
From: "Walt Amos" <waltamos@surfree.com>
To: "Qrp-1 Posts" <qrp-1@lehigh.edu>
Subject: [57427] HELP: Fw: logging nightmares
Message-ID: <008c01bf3fa9\$ecd88920\$1a891b26@walthk8cv>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

This is another way to do it

Walt

----- Original Message -----
From: Walt Amos <waltamos@surfree.com>
To: <marion@montana.com>
Sent: Monday, December 06, 1999 04:57
Subject: Re: logging nightmares

> Well, Roy:


```
>
>
> You need to make trlog reside in
>
> c:\trlog
>
> You need to make a sub directory called contests
>
> c:\trlog\contests
>
> you need to make a directory ( directory instead of folder since you are
> under DOS )
> for the contest under contests
>
> c:\trlog\contests\a160cw99    ( no more than 8 characters under DOS )
>
> Now you need to go to      autoexec.bat
>
> and use an editor ..... humm I use Norton commander, let me go and
see
> if there is such a thing as edit any more? YES !!
>
> so
>
> save autoexec.bat
>
> xcopy c:\autoexec.bat c:\autoexec.trl
>
> you should also have a BOOT DISK , if you don't know how to do this I will
> tell you but I hope you do know how?
>
> now      edit c:\autoexec.bat
>
> Look for a path statement
>
> PATH=C:\WINDOWS; C:\WINDOWS\COMMAND;
>
> after command add      C:\BAT;C:\TRLOG;
>
> save it      alt-f , then alt-s, then again alt-f and  alt-x
>
> Md c:\bat
>
> write a batch file there .
>
> edit c:\bat\a160cw99.bat
>
> @echo off
```

```
> cd\trlog\contests\a160cw99
> tr
>
> Save it like above.
>
> re start your computer and PRAY ..... :-)
>
>
> IF all worked out right you should be at a c:> ??
>
> You are under windows ..... oh, my , god, well you will have to hit
the
> F8 key as the machine is starting and select " boot to DOS only " , read
the
> 98 book?
>
> Now you should be able to start a practice contest ..... whee !!
>
> type a160cw99 at the c:\>      and BOOM you should be in trlog and at the
top
> it should say a160cw99 somewhere. Make some contacts and then save it with
>
> alt-x and then y and again y
>
> type post
>
> You should see in yellow a160cw99 if everything went right.
>
> do the P thing
>
> go to your favorite file program and find a160cw99.dat in the
>
> c:\trlog\contests\a160cw99 directory
>
> Is it there ? :-)
>
> You really need a LOCAL to help you get started but it is fun once it is
up
> and running fine.
>
> Walt K8CV Royal Oak, Michigan QRP-L # 935 ZOMBIE # 188
>
```

Date: Mon, 06 Dec 1999 16:30:04 +1100

From: "Ian C. Purdie VK2TIP" <ianpurdie@integritynet.com.au>
To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [57428] Re:The Actual Message sent to all U.S. Amateurs on Dec. 7, 1941,
as
received by W9PRS.
Message-ID: <384B49DC.EE6D6F94@integritynet.com.au>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

John Dilks, K2TQN posted this to glowbugs and deserves retransmission.
Definitely worth looking at the original (and probably only existing)
message copied on Dec 7th, 1941

To all,

December 7, 1941

A message to all U.S. Radio Amateurs from W1AW, the American Radio
Relay League, as copied by W9PRS on that day.

<http://www.eht.com/oldradio/awa/>

With deepest respect and honor to our Veterans and all the great
radio men who so bravely gave their lives for freedom.

72/73's

Ian Purdie Budgewoi N.S.W. Australia - Co-ords 33o:14':00" S
151o:34':00" E
VK2TIP "I'll give you the TIP mate" QRP-L member #1978.
URL - <http://www.integritynet.com.au/~purdic/> URL -
<http://www.qsl.net/vk2tip/>

Date: Sun, 5 Dec 1999 23:59:13 -0600 (CST)
From: aweiss@usd.edu (Ade Weiss W0RSP)
To: qrp-l@lehigh.edu
Subject: [57429] RE: feeding dipoles with ladderline
Message-ID: <199912060559.XAA12332@sunburst.usd.edu>

Hi all,

This weekend I purchased 100 ft. of 450 ohm ladderline, and I want to feed my

dipole with it, so I can make it easy to tune on all bands, and have a bit less loss. I am confused on a few things: First of all, all of the information I have seen on this subject says to connect the ladderline directly to the dipole. I don't see why this is possible, since a resonant dipole's impedance is about 50 ohms. This is a 9:1 impedance ratio AT THE ANTENNA FEEDPOINT, and wouldn't a LOT of power be lost on transmit AND receive?"

NO. The 9:1 mismatch seems very bad, but ladderline SWR loss is very low.

If you only want to operate the antenna on a single band, it would be a good idea to use a balun and coax feedline. But coax makes it a single-band antenna.

The point of using the ladderline is low loss relative to coax on all the bands you use it on. When you go to the second harmonic, i.e., a 7mHz dipole operated on 14mHz, your feedpoint impedance is very high; on 21mHz it is close to that on 7mHz, on 28mHz, again, it is very high.

So, the choice is single-band or multiband.

"Secondly, how important is it to run the line >2-3" away from metal? How can impedance be measured to see what happens when the line is close to metal or under other conditions?"

First, VERY IMPORTANT. Ladderline is unshielded and the r.f. field will couple into any metal near it. For example, if you drill a hole in a metal mobile home wall just big enough to slide a piece of ladderline thru it, then the r.f. field along the ladderline will run into a shield wall, with a portion passing thru the hole.

Another characteristic of unshielded twinlead/ladderline is the effect of water and snow. If, for example, you lay the feedline on your dry roof and then mark the ATU settings for 1:1 SWR on a band, and then it rains, or worse yet, snow piles up on the roof and feedline, very different ATU settings will be required! In the old days of TV antennas, every decent TV ant. installation guy used those old "screw-in" 4-inch stand-offs to get the twinlead away from surfaces that could collect wetness. Water on the twinlead introduces another dielectric, and snow in effect puts an absorptive dielectric around it. So, the best idea is to have the ladderline away from surfaces that collect wet/snow.

"On the antenna tuner side of things, it seems that the place an antenna tuner should be is at the antenna feedpoint."

ABSOLUTELY CORRECT! However, try hanging an MFJ-941C at the feedpoint of a dipole! An ATU at the feedpoint produces one important benefit -- it matches the feedpoint to the feedline characteristic impedance so that no SWR occurs on the feedline. As a result, there is no SWR loss. This is the way I handle my verticals -- the ATU is at the base of the antenna, adjusted for 1:1 into the feedline (coax), and then the only loss that occurs in the feedline is due to its basic loss figure.

"Obviously, practicality is a big issue here, but now my dad and I are working on designing an antenna tuner using the Smith Chart, and figuring out what component values are needed to bring the antenna to 50 ohms. What I would love to do is put motors on the L's and C's and make it controllable from the shack (yeah, I know, you're thinking Z-11, but price and learning factor must be considered, besides, I have fun tuning antennas :-))"

You're on the right track! The "big" antenna guys mostly use remotely adjusted ATU's at the antenna controlled from the shack. Yes, it is a lot more work, but believe me, there have been many times that I would have liked to have a remotely adjusted ATU at the base of my verticals! With snow on the ground, it isn't so easy getting at everything, inserting my trusty SCORPION LED SWR bridge, and firing up the SST at the base of the antenna to make the adjustments!

Carry on! Your thinking is on the right track!

72, Ade

Date: Mon, 6 Dec 1999 06:30:18 -0500 (EST)
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
To: Andy C Meng <andymeng@juno.com>
Cc: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [57430] Re: feeding dipoles with ladderline... also some tuner thoughts & questions
Message-ID: <Pine.GS0.4.10.9912060611270.14526-1000000@larry.cas.utk.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Andy,

Your questions are very fundamental and significant.

If a transmission line has significant losses over the length of run you might use, then placing an ATU at the connection of the line to the antenna would be very important.

However, parallel transmission line, when properly handled, has very low losses--so low that higher SWRs do not increase the losses unacceptably. Since the high SWR acts as a multiplier on the basic loss of the line when matched, with parallel line, it is almost like multiplying nothing by a number and therefore coming out with nearly nothing as the total loss number.

The lower the matched-loss of the line you use, the lower the overall losses, even when the SWR is high. The vinyl 450-Ohm line with "windows" is better than solid vinyl 300-Ohm line, but 600-Ohm open wire is better than both of those. If the SWR is about 5:1 or so, the open-wire line mismatched will often have lower losses than coaxial cable that is matched perfectly.

Handling parallel transmission line requires more care. The lines are open to surrounding influences. (In coaxial cable, the transmission line fields are between the inner side of the braid and the outer surface of the center conductor and hence very confined.) Balance of voltages and currents at every point along the line is important to keep it functioning like a transmission line. Imbalance tends to produce radiation at the imbalance region--and hence less power to the antenna itself. So making shallow bends, keeping the line several line widths away from metal, and other measures to prevent imbalance are all good practices to maximize efficiency of transferring power from the shack to the antenna.

With a transmission line that has low losses even at high SWRs, most commercial and amateur antenna installers of multi-band antennas then measure the pros and cons of a remote antenna tuner vs. one at the shack. The cons of a remote tuner are mechanical complexity, down-time when repairs are needed, susceptibility to weather, etc. The result normally is a decision to place the atu in the shack where it is convenient to adjust, simple to maintain, and protected from the weather.

Notice, then, that the final decision is not just a measure of losses, although that is one very major factor in system design. How to place, protect, and maintain the system are also important questions that contribute to a final design decision.

To aid you in the design of your own ATU, there are a couple of software packages you might be interested in. One is MocroSmith, a computer Smith Chart available from ARRL. Another is TL, a software program from ARRL that allows calculations of impedances, losses, and match along almost any

kind of line. With the "A" suffix, the program also has a module for looking at the effects of ATU networks. There are also utility program in Basic in the HAMCALC collection from VE3ERP for calculating impedance and other factors along transmission lines and for calculating the parameters of antenna tuner networks. There are others, but these three might be the most accessible.

I hope this sheds a little light on the transmission line situation for you.

-73-

LB, W4RNL

L. B. Cebik, W4RNL	/\	/\	*	/	/	/	Tel: (423) 938-6335
1434 High Mesa Drive	/	\	\	----	/	---	
Knoxville, Tennessee	/\	\	\	/	/		http://www.cebik.com
37938-4443 USA	/	\	\				e-mail: cebik@utk.edu

Date: Mon, 06 Dec 1999 06:47:19 -0500
From: Charles Greene <cgreene@loa.com>
To: andymeng@juno.com, "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [57431] Re: feeding dipoles with ladderline... also some tuner thoughts & questions
Message-ID: <4.2.2.19991206062310.00a9bbd0@mail.loa.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

At 10:23 PM 12/5/99 +0000, Andy C Meng wrote:

Andy, The ladder line becomes part of the antenna system and you have standing waves on it, just like on the antenna. But since the ladder line is low (not zero) loss, that is fine. You need to tune it with a balanced antenna tuner, or a Transmatch type tuner with a balanced output. The Transmatch tuner with a balanced will work, it has limitations. You should avoid an exact current or voltage node, (a multiple of quarter wave lengths). Yes, you should keep the balanced feed line 2-3" away from metal, if for no other reason that it might arc to the metal.

The advantage of the ladder type feed line for the antenna is that it will work on several bands. If you feed the antenna with a 50 ohm coax, the antenna will be 50 ohms on only one band. If you want a

multiple band antenna fed with coax, look at a Windom. A Windom is an off-center fed wire antenna with a 4:1 balun at the feed point. For that matter, you should use a 1:1 balun for a single band coax fed antenna to keep RF off the feed line. RF on the feed line will radiate, and unless the feed line comes off a 90 degree angle to the antenna, it will distort your radiated pattern. Also, RF can get into your shack and cause RF feed back from mikes, or even cause your radio controls to be hot (RF wise) to the touch. On the SCAF, they work and you can probably buy one used. The DSP filters work much better, and I have seen the MFJ DSP filter advertised at a good price.

If you have some specific question, please reply direct.

>Hi all,

> This weekend I purchased 100 ft. of 450 ohm ladderline, and I want
>to feed my dipole
>with it, so I can make it easy to tune on all bands, and have a bit less
>loss. I am confused
>on a few things, though. First of all, all of the information I have seen
>on this subject says
>to connect the ladderline directly to the dipole. I don't see why this is
>possible, since a
>resonant dipole's impedance is about 50 ohms. This is a 9:1 impedance
>ratio AT THE
>ANTENNA FEEDPOINT, and wouldn't a LOT of power be lost on transmit AND
>receive?
>It seems to me that there should be a transformer at the antenna
>feedpoint to match this?
>Actually, I guess ladderline would only be good for antenna systems with
>a tuner, because
>with a resonant antenna you would need 9:1 impedance transformers on each
>end of the
>line. I guess 50 ohm coax would be best for a resonant system (I'm
>thinking as I go).

>

>Secondly, how important is it to run the line >2-3" away from metal? How
>can impedance be
>measured to see what happens when the line is close to metal or under
>other conditions?

>

>On the antenna tuner side of things, it seems that the place an antenna
>tuner should be is
>at the antenna feedpoint. Otherwise, the impedance mismatches between the
>antenna and
>transmission line will lose a lot of power, especially as you tune
>farther and farther away from
>the resonant frequency. You could lose a lot of power before it ever got
>to the radio (on receive)

>or to the antenna (on transmit). So all the antenna tuner does is make
>the radio happy by
>resonating the antenna and ground system (although that's advantageous on
>receive).

>

>Obviously, practicality is a big issue here, but now my dad and I are
>working on designing an
>antenna tuner using the Smith Chart, and figuring out what component
>values are needed to
>bring the antenna to 50 ohms. What i would love to do is put motors on
>the L's and C's and
>make it controllable from the shack (yeah, I know, you're thinking Z-11,
>but price and learning
>factor must be considered, besides, I have fun tuning antennas :-). I
>think it would be neat to
>build and use, maybe even hook it up to the computer and write a control
>program for it, SWR
>indicated and all. Enough rambling on that...

>

>My Juno email is still hardly receiving any messages, so please reply to
>the list (I can look on the
>Internet) or direct to: kc8kfi@yahoo.com If you send it to my Juno
>account I probably won't get it.

>

>Oh, i operated in the sprint a bit today (actually quite a bit!) but I
>only made 6 contacts. Then what
>really dissapointed me was when I forgot to turn the power down for the
>last 2 Q's, so it was
>100+ Watts... 1X mult :-(40M, 20M, and 15M (first Q's on 15 ever...)
>The stations were all on top
>of each other, I don't think we should feel that we need to keep it in
>5-10KHz... I am using an FT-101
>which has pretty wide CW filters and only dream of a 599zx :-). Maybe
>it's just the rig and I shouldn't
>be complaining. I guess I need to make a SCAF or something...

>

>It's getting late and I have to get to bed.

>

>Andy KC8KFI

>

>Cincinnati, OH SWORDS FPQRP #8 NORCAL QRP-ARCI #10085 QRP-L #1813

Try PSK31. Check: <http://aintel.bi.ehu.es/psk31.html>
and May 99 QST. K2 S/N 462.

Chas, W1CG

Rhode Island TCPIP Address Coordinator
w1crg@arrl.net

Date: Mon, 06 Dec 1999 06:10:39 -0600
From: "T. E. 'Doc' Drake" <w5tb@SoftHome.net>
To: andymeng@juno.com, "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [57432] Re: feeding dipoles with ladderline... also some tuner
thoughts & questions
Message-ID: <3.0.3.32.19991206061039.007068cc@pop.SoftHome.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 10:23 PM 12/5/99 +0000, Andy C Meng wrote:

>Hi all,
> This weekend I purchased 100 ft. of 450 ohm ladderline, and I want
>to feed my dipole ...

Hi Andy! The ladderline fed dipole will indeed need a tuner. A great
starting place would be Antennas From the Ground Up: by L. B. Cebik, W4RNL
<http://www.cebik.com/groundup.html>

check out his other terrific antenna articles at
<http://www.cebik.com/radio.html>

Also read THE EASY WAY at <http://www.midtel.net/~pmam/swr.htm>

have fun!

73 T.E. 'Doc' Drake

~~~~~  
FISTS # 5365 QRPARCI # 3532 ARRL Life member  
hamming since 1959 and it just keeps getting better

-----

Date: Mon, 6 Dec 1999 07:49:18 -0400  
From: Greg Weinfurtner <weinfurt@oak.cats.ohiou.edu>  
To: faunt@netcom.com, qrp-1@Lehigh.EDU  
Subject: [57433] Re: circuit help needed -brain not working  
Message-ID: <v03110700b47152d5e415@[132.235.81.85]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"

>I need to have an LED light when the voltage across a resistor is  
>above 2.5 to 3 V, but not be lit when the voltage is at 1.7 V.  
>  
>What do I need here?  
>  
>73, doug

Doug,  
Put any silicon diode in series with the LED. Since the diodes  
have voltage drops of about .6 v before conduction, it seems you'll only  
need one or two of them.

Happy Trails!

NS80 Greg

-----  
Date: Mon, 6 Dec 1999 07:46:27 -0600  
From: Karl Kanalz <KKanalz@excel.com>  
To: "'tscott@eni.net'" <tscott@eni.net>, Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>  
Subject: [57434] RE: Air Variable Cap kits?...  
Message-ID: <2D343922E283D211945C0008C7A41B2A01310174@ADNTEX01.adsn.dal.excel.com>  
MIME-Version: 1.0  
Content-Type: text/plain;  
charset="iso-8859-1"

Yes, Tom. You need that dual-section (not quad section!) differential  
variable capacitor to make a replica of the Johnson Matchbox "tuner"!

My father built a replica, using home-made plates, shaft, end plates, etc.  
for the differential capacitor and hand-wound a variable-pitch, variable  
diameter coil (link-coupled, of course) to optimize it for 10M down to the  
bottom end of 80M. It worked like a gem and would match an even wider range  
of impedances than the "original" Matchbox !! He also made it capable of

Karl K - W8TIF  
McKinney, Texas

From: Tom Scott [mailto:tscott@eni.net]  
Sent: Saturday, December 04, 1999 4:39 PM  
To: Low Power Amateur Radio Discussion  
Subject: Air Variable Cap kits?...

I have a project that could use a quad section air cap made up of two isolated dual differential air caps. Low voltage receiver size is adequate. If I could find one that can be taken apart and put back together differential style, that would work. Failing that, I guess I can make one from scratch, just a lot of work.

Content-Type: text/plain;

charset="iso-8859-1"

No, no, no, no! Those plugs and jacks are NOT "banana" types, George! They are more commonly known as "phone tip jacks" (and plugs). I think you can still find them in Mouser Electronics or Digi-Key (but I know that Newark Electronics and Allied Electronics still carry them) catalogs. Mouser is on-line on the Internet and I suspect that Digi-Key is on-line as well.

H.H. Smith makes them and years ago, E.F. Johnson made them available as components. I believe there are several more manufacturers these days. Break out the catalogs, George!

Karl K - W8TIF  
McKinney, Texas

-----Original Message-----

From: George Huston [mailto:hudog@sparc.isl.net]  
Sent: Sunday, December 05, 1999 7:01 AM  
To: Low Power Amateur Radio Discussion  
Subject: Need source for Matchbox swr coupler plugs

Can someone make a recommendation for a source for the 3 plugs/jacks which plug into the remote SWR bridge coupler for a Johnson matchbox. Color doesn't matter (the original has a black, red, and white plug). I measured the inside diameter of the female receptacles on the coupler, and it looks to be about .080". I assume a banana plug would be preferred, since it would compress when inserted and provide a better wipe contact.

Any help would be greatly appreciated!

thanks,

George N0GH

-----  
Date: Mon, 6 Dec 1999 12:01:15 -0300  
From: Kleibe Jacinto de Araujo <kleibe@anatel.gov.br>  
To: "'qrp-1@Lehigh.EDU'" <qrp-1@Lehigh.EDU>  
Subject: [57436] cw filters  
Message-ID: <6A3A6C7C6177D311932B0000E21F2B781537E4@ANATELMAILE>  
MIME-Version: 1.0  
Content-Type: text/plain;  
charset="iso-8859-1"  
Content-Transfer-Encoding: quoted-printable

Hello Gang,

I need a help on cw audio filters, web or schematics.I appreciate any help.....

Very tanks

73=B4s

Kleibe Jacinto de Araujo

PP2KJA=20

Brazil

-----  
Date: Mon, 6 Dec 1999 10:00:17 -0500  
From: Bill B Lazure <n2tpa@juno.com>  
To: QRP-L@Lehigh.edu  
Subject: [57437] CONTEST: Electronic submission question  
Message-ID: <19991206.100251.7598.3.N2TPA@juno.com>

Gang,

I tried to send my Sweeps log electronically this year. When I mailed it off as an attachment, I sent myself a copy to make sure that everything was OK. What I received was not the .log file as an attachment, but in the body of the mail (below a purple "separator" line).

I was running Netscape Navigator 3.X on a network machine, NOT the JUNO I'm using right now.

Finally, the question: Does Netscape automatically append incoming e-mails with their .txt attachments? Or, does Netscape append the e-mail as it's out-going? Did the ARRL receive this mail with an attachment or not?

I've tried contacting the ARRL to see how they received it, but with all of the log submissions they have right now, they just don't have time to check it. If this has failed, I'll be doing it on paper from now on.

Any thoughts?

Bill

W2EB

35,100 claimed score

-----  
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Get your free software today: <http://dl.www.juno.com/dynoget/tagj>.  
-----

Date: Mon, 06 Dec 1999 07:38:23 PST  
From: "Tedd Wong" <wong\_te@hotmail.com>  
To: qrp-1@lehigh.edu  
Subject: [57438] Re: FS: QRP Radio and Accessories  
Message-ID: <19991206153823.20192.qmail@hotmail.com>  
Mime-Version: 1.0  
Content-Type: text/plain; format=flowed

DSW-40, Rainbow Tuner, 38 Special and TT transverter have been sold.  
Kenwood TS-130V still available.

Kenwood TS-130V (10+ watts out on all bands, WARC incl., band switch is a little sticky but overall radio works great.) \$275 + shipping.

Thanks for BW,

Tedd AB6CO

-----  
Get Your Private, Free Email at <http://www.hotmail.com>

-----  
Date: Mon, 6 Dec 1999 07:59:37 -0800 (PST)  
From: Monte Stark <ku7y@dri.edu>  
To: Bill B Lazure <n2tpa@juno.com>  
Cc: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>  
Subject: [57439] Re: CONTEST: Electronic submission question  
Message-ID: <Pine.GS0.4.10.9912060754510.28471-1000000@rotor.dri.edu>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi Bill,

I have emailed several logs to the ARRL, CQ, NCJ and etc from Netscape without any trouble.

If you look in the Preferences section you may find where to change the way it handles attachments.

I always turn off any option that does most anything automatically!

cul,

73, Ron

.....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....  
....ku7y@dri.edu....Washoe Lake, Nevada....NRA LIFE....  
.....SOWP 5545M.....WHINERS #1.....ZOMBIE #18.....

-----  
Date: Mon, 6 Dec 1999 11:12:22 -0500  
From: Derek Brown <DBrown@RFMD.com>  
To: "'QRP-L'" <qrp-l@Lehigh.EDU>  
Subject: [57440] Stand-alone Code Readers  
Message-ID: <7FBBB9EBE9DAD211956F006094253FD9D65D59@MAIL>  
MIME-Version: 1.0  
Content-Type: text/plain

A few buddies and I were talking about code readers (Their names / callsigns have purposely been omitted to save them the grief I'm about to endure.) I freely admit it, somewhere in the 30 - 40 WPM zone, my mind goes South. And yeah, I need to work at improving my CW speed. Until that mythical day occurs, it would be great to have a CW reader that would let us "listen in" on the Speed Demons who inhabit our airwaves. [I hope to join them one day.] A code reader would be useful in a couple other scenarios: when braindeath occurs late into a contest or when you really wish to know if that "perfect" CW we all send, really is. Another use would be to show the public what's going on during Field Day or other events.

I am not interested in a "black box" interface which requires using a PC although I have a laptop. There, at least, used to be various stand alone units available to decipher CW. My recollection is that there is a wide range of capabilities in those units capability to "pull" out weak stations and / or cope with QRM. This capability was based on the filters within the unit.

If you either own or have used a unit that you'd recommend, please let me know about it and whether it still available or not. Compact size and battery operation are two desirable features. I would prefer that you reply directly - I can handle private criticism. :-)

Derek Brown, WF4I  
Greensboro, NC  
dbrown@rfmd.com

-----  
Date: Mon, 6 Dec 1999 08:28:27 -0800 (PST)  
From: Monte Stark <ku7y@dri.edu>  
To: Derek Brown <DBrown@RFMD.com>  
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>



Subject: [57441] Re: Stand-alone Code Readers  
Message-ID: <Pine.GS0.4.10.9912060824420.28947-100000@rotor.dri.edu>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi Derek,

I don't see anything wrong with someone using a Code Reader.

They are nothing more than a tool.

Lets see.....we all (most anyway) use a keyer. Isn't a keyer  
really a Code Reader

-----

1

: -)

OK, back in my hole.....

73, Ron

.....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....  
....ku7y@dri.edu....Washoe Lake, Nevada....NRA LIFE....  
.....SOWP 5545M.....WHINERS #1.....ZOMBIE #18.....

-----

Date: Mon, 6 Dec 1999 11:27:03 -0500  
From: "Tom Hybiske" <hybiske@generalatronics.com>  
To: <n2tpa@juno.com>, "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>  
Subject: [57442] Re: CONTEST: Electronic submission question  
Message-ID: <00a801bf4006\$bb542aa0\$8c68f326@generalatronics.com>  
MIME-Version: 1.0  
Content-Type: text/plain;  
charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit

Hi Bill,

The League should/will publish a web page listing all of the logs received to date. When I first started to e-mail mine, I had the same trepidation as you. But it got there fine, and now it's the only way I submit them. Look for that page on the web, and you should have plenty of time to either resubmit or snail mail them.

7 3,

Tom K3GM

>  
> I tried to send my Sweeps log electronically this year. When I  
> mailed it off as an attachment, I sent myself a copy to make sure that  
> everything was OK. What I received was not the .log file as an  
> attachment, but in the body of the mail (below a purple "separator"  
> line).  
> I was running Netscape Navigator 3.X on a network machine, NOT the  
> JUNO I'm using right now.  
> Finally, the question: Does Netscape automatically append incoming  
> e-mails with their .txt attachments? Or, does Netscape append the  
> e-mail as it's out-going? Did the ARRL receive this mail with an  
> attachment or not?  
> I've tried contacting the ARRL to see how they received it, but with  
> all of the log submissions they have right now, they just don't have time  
> to check it. If this has failed, I'll be doing it on paper from now on.  
> Any thoughts?  
>  
> Bill  
> W2EB  
> .

-----  
Date: Mon, 6 Dec 1999 10:56:31 -0600  
From: Karl Kanalz <KKanalz@excel.com>  
To: "'ku7y@dri.edu'" <ku7y@dri.edu>, Low Power Amateur Radio Discussion <qrp-  
l@Lehigh.EDU>  
Subject: [57443] RE: Stand-alone Code Readers  
Message-ID: <2D343922E283D211945C0008C7A41B2A01310181@ADNTEX01.adsn.dal.excel.com>  
MIME-Version: 1.0  
Content-Type: text/plain;  
charset="iso-8859-1"

Well, no, Monte.... A keyer (mechanical or electronic) isn't a code  
"reader", but a "code SENDER". Unless it's a computer being used to  
generate the Morse characters from a typist's keyboard, the usual "keyer"  
requires skill and operation by a human.

The code "reader" Derek is referring to is usually (although not always) a  
small box with some electronic innerds and a display on the front panel to  
"read" (or translate) the receiver's dits and dahs to alpha-numeric  
characters. Of course, there are computer programs that can do the same

thing (but they're not easily transportable as other devices on the market and as Derek wanted).

I'd rather suggest to Derek that he (and his friends) focus instead on learning to copy 40 wpm "directly" (that is, from the receiver to their ears). It may take a bit longer to achieve than simply connecting a box of tricks to the receiver output, but the end result will be a LOT more enjoyable and satisfying!

Karl K - W8TIF  
McKinney, Texas

-----Original Message-----

From: Monte Stark [mailto:ku7y@dri.edu]  
Sent: Monday, December 06, 1999 10:28 AM  
To: Low Power Amateur Radio Discussion  
Subject: Re: Stand-alone Code Readers

Hi Derek,

I don't see anything wrong with someone using a Code Reader.

They are nothing more than a tool.

Lets see.....we all (most anyway) use a keyer. Isn't a keyer really a Code Reader :-)

OK, back in my hole.....

73, Ron

.....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....

-----  
Date: Mon, 06 Dec 1999 10:00:40 -0700  
From: Bruce Grubbs N7CEE <n7cee@arrl.net>  
To: kr0y@juno.com, "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>  
Subject: [57444] Re: Small Wonder Labs DSW rigs  
Message-ID: <3.0.5.32.19991206100040.009e6990@earthlink.net>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"

I just got back from a 3 day solo hiking trip in the desert. The DSW40 was great to have along. I kept a sked with a friend nightly, and also listened a lot. I use an inverted V which goes up in a few minutes (single support). With it being dark by 1800, it was nice to be able to play with the radio

for a couple of hours.

Having used the nearest competing rig (SST), I really like the tuning range and RIT on the DSW series.

73

Bruce N7CEE  
n7cee@arrl.net

-----  
Date: Mon, 06 Dec 1999 09:55:42 -0700  
From: Bruce Grubbs N7CEE <n7cee@arrl.net>  
To: k7qo@primenet.com, "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>  
Subject: [57445] Re: NJQRP Newsletter "QRP Homebrewer"  
Message-ID: <3.0.5.32.19991206095542.009e6100@earthlink.net>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"

Second the motion. "QRP Homebrewer" number 1 was great and I'm glad I subscribed.

73

Bruce N7CEE  
n7cee@arrl.net

-----  
Date: Mon, 6 Dec 1999 11:08:19 -0600  
From: "Dan W. Dooley" <dandooley@pipeline.com>  
To: "QRP List" <qrp-l@Lehigh.EDU>  
Subject: [57446] DSW-40 and paddles  
Message-ID: <002001bf400c\$7ec09a00\$05987b7b@CSS0048.bergenbrunswick.com>  
MIME-Version: 1.0  
Content-Type: text/plain;  
          charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit

My DSW-40 is now under construction. I am anxious to get it finished.

An original question of mine was; what kind of space is it going to take up in my briefcase. I bought the enclosure kit with it. Shucks! the thing

would almost fit in a shirt pocket! And it looks tough.

A question: I apologize for this one since I believe there have been a lot of posts on the topic of paddles, but with all the e-mail I get, I can't digest everything that comes through. So, not wanting to burden the list with too much duplication, replying to me direct might be preferred.

I need recommendations for a small paddle set to go with it. I have the Bencher at home, but it's kinda big, heavy and too "delicate" to haul around too much. I'd like something small, but with a decent "feel" and not so fragile that I risk damaging it in my briefcase or suitcase.

Dan W. Dooley WB5TKA Y2K Complacent  
e-mail to: dandooley@pipeline.com  
Si Hoc Legere Scis Nimium Eruditionis Habes

-----  
Date: Mon, 06 Dec 1999 01:43:39 -0700  
From: tom whalen <wb5qyt@eFortress.com>  
To: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>  
Subject: [57447] oscilloscope primer, contest fun, MFJ CUB?  
Message-ID: <384B773B.6E37@eFortress.com>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Gang,

Can someone turn me on to the site where Paul's NA5N's "Oscilloscope Primer" article is? I believe thats who wrote it.

Just was given a Tektronix model 535. A real boat anchor but works to 15 mhz. Just in time to trouble shoot my 38S! I must be one of the last people to built that rig!

Had fun in the test. Worked 10m with the AEA DX Handy made about 10 Q's in a half hour and then to 20m with the NC-20 and made another 10 Q's. Used a 44' center fed zepp up about 25ft for the antler.

Was going to order a 15 meter CUB for Xmas but the lady at MFJ said they are not quite ready to ship. So, will have to look for something else

Highlight of the day was working W7ZOI Wes. He was on his new xmtr and sounded great on 10 meters.

See you all in the 10 meter contest next weekend! 72, Tom WB5QYT

-----  
Date: Mon, 6 Dec 1999 09:36:34 -0800  
From: "Barry L. Geipel - AD6HR" <bgeipel@primenet.com>  
To: <n5ib@juno.com>, "QRP-L" <qrp-l@Lehigh.EDU>  
Subject: [57448] Re: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr  
Message-ID: <004901bf4010\$81762040\$5dc9bbc0@cwil.com>  
MIME-Version: 1.0  
Content-Type: text/plain;  
        charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit

Thanks for the great info. My HTX-10 is already back to Radio Shack for repairs. Saturday morning, just two days after getting the rig, the audio level dropped to the point that I could hardly hear anything. The S-Meter was still showing strong signals and the radio transmitted just fine. With headphones attached I could just barely make out signals. The manager at RS said that it should be back by Thursday.

Can you describe the inside of the rig in more detail? Is it all surface mount components? How hard will this rig be to work on?

BTW, before the audio went south, I was able to work Argentina and Illinois from Southern California, so it seems to work pretty good.

I can't wait for you CW mods.

73,  
Barry AD6HR

-----  
Date: Mon, 06 Dec 1999 07:58:21 -0700  
From: Brian Kassel <bkassel@dancris.com>  
To: QRP-L <QRP-L@lehigh.edu>  
Subject: [57449] Contest: K7RE Corrected ARCI Holiday Sprint Results  
Message-ID: <384BCF0D.1EA64BA1@dancris.com>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Gangue:

Well somehow I managed to send the wrong results of last weekend's contest!

Below are the actual results of that contest for K7RE:

Wow, what fun!

High points included working KL7GN on 10, 15 and 20, along with good old Jim, AL7FS on 20.

I used my K-2 at 4.7W. to a 3 el triband beam up 35 ft., and ran all 4 hours. No operation on 40 or 80 as my power line noise problem has not yet been repaired. The noise even hurt a bit on 20M, especially to the north east, which is the direction of the noise from my AZ QTH. Sorry if I missed a few folks on 20 because of that problem.

Raw Totals:

71 QSO's

256 QSO points

49 SPC's

X7 Power multiplier

5,000 Bonus points for HB Xcvt

92,808 total score

Brian K7RE

-----  
Date: Mon, 6 Dec 1999 12:45:41 -0500 (EST)

From: Bob Patten <n4bp@bc.seflin.org>

To: Elecraft Reflector <elecraft@qth.net>, QRP-L Reflector <qrp-l@lehigh.edu>

Subject: [57450] N4BP Holiday Sprint With K2

Message-ID: <Pine.3.89.9912061211.A4661-0100000@bc.seflin.org>

MIME-Version: 1.0

Content-Type: TEXT/PLAIN; charset=US-ASCII

Content-Transfer-Encoding: QUOTED-PRINTABLE

1999 Holiday Spirits Homebrew Sprint

=20

Call used: N4BP

Location: FL

Category: Single Op All Band

Mode: CW

Power: 5W

Callsign of Operator: N4BP =20

=20

Exchanged Information: N4BP RST FL 3412

=20

Hours of Operation: 03:55

=20

| band  | QSOs | points | mults                                |
|-------|------|--------|--------------------------------------|
| 160   | 0    | 0      | 0                                    |
| 80    | 1    | 14     | 1                                    |
| 40    | 32   | 952    | 19=09=09Homebrew Bonus Points:       |
| 20    | 57   | 1659   | 33=09                                |
| 15    | 47   | 1498   | 25=09=095 X 5000 =3D 25000 (HB XCVR) |
| 10    | 18   | 567    | 12                                   |
| 50    | 0    | 0      | 0                                    |
| TOTAL | 155  | 4690   | 90                                   |

SCORE: 422,100 + 25,000 =3D

=20

=09=09=09=09=09=09 447,100 Points

=20

Comments: K2 @ 5W, TH7-DXX @ 65ft, 40M dipole @ 35ft, 80M dipole @ 60ft

=20

Jumped into the sprint following a full effort in the ARRL 160M Contest. My head was still spinning from two nights of listening to noise and struggling for every contact! What a pleasure to be able to hear and run stations for a while. Condx seemed better on 10 & 15 than on 20M.

=20

=09 73,  
=09=09=09=09 , ' ' ' ,  
Bob Patten, N4BP ( 0 0 ) Plantation, FL=20  
-----o00o-( )-o00-----=

----

E-Mail: n4bp@bc.seflin.org  
Web Page: <http://wg104a.wh.uni-stuttgart.de/~n4bp>  
Brass Pounder BBS: (954) 472-7715 =20

-----

Date: Mon, 6 Dec 1999 13:39:25 -0500 (EST)  
From: Bob Patten <n4bp@bc.seflin.org>  
To: Elecraft Reflector <elecraft@qth.net>, QRP-L Reflector <qrp-l@lehigh.edu>  
Subject: [57451] N4BP & K2 in ARRL 160  
Message-ID: <Pine.3.89.9912061304.A16086-0100000@bc.seflin.org>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII  
Content-Transfer-Encoding: QUOTED-PRINTABLE



[illegible]

```

=09 73,
=09=09=09=09 , ' ' ' ',
    Bob Patten, N4BP          ( 0 0 )          Plantation, FL=20
-----o00o-( )-o00-----=

```

E-Mail: [n4bp@bc.seflin.org](mailto:n4bp@bc.seflin.org)  
Web Page: <http://wg104a.wh.uni-stuttgart.de/~n4bp>  
Brass Pounder BBS: (954) 472-7715 =20

Date: Mon, 06 Dec 1999 03:06:36 -0700  
From: tom whalen <wb5qyt@eFortress.com>  
To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>  
Subject: [57452] Info found  
Message-ID: <384B8AAC.3C06@eFortress.com>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Gang,

Art WH7N has supplied me with the oscilloscope info. Now, to try to figure out what is wrong with my 38s and GM-15...

72, Tom WB5QYT...

-----  
Date: Mon, 06 Dec 1999 10:32:51 -0800  
From: "Arthur G. Silvers" <ags@ieee.org>  
To: drboom@bright.net, qrp-l <qrp-l@Lehigh.EDU>  
Subject: [57453] Re: 2N2/40 gets "Hearing Aids"  
Message-ID: <384C0153.F823CAF0@ieee.org>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Tim,

When you get to testing the transmitter, be certain to keep the drive down with POT4. I just went through two sets of PAs over the weekend with the cascode RF amp at full bore. See Jim's comment on page 34 and Preston's on page 57. Some lessons are learned the hard way. Only .2 milliwatts are necessary from the cascode RF amp which is capable of providing 10 milliwatts.

72  
Arth, W6AGS

-----  
Date: Mon, 06 Dec 1999 13:56:35 -0500  
From: Thomas Jennings <jennings@eng14.rochny.uspra.abb.com>  
To: qrp-l <qrp-l@Lehigh.EDU>  
Subject: [57454] Fox: KV2X Final Announcement.  
Message-ID: <384C06E3.6A8FCD8@eng14.rochny.uspra.abb.com>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Here is the second announcement that I will be the fox on Monday, Dec 6 at 8:00 PM EST. I will be transmitting on 7037 and will tune 7037 to 7040.

BUT IF QRM IS BAD ON 7037 I WILL TRANSMIT UP 1 OR 2 KHZ

I will be using an IC706 at 5W out to a ground mounted 40 meter quarter wave verticle.

GL es 72

Tom, kv2x

-----  
Date: Mon, 06 Dec 1999 13:58:17 +0000  
From: Michael Neverdosky <mneverdosky@earthlink.net>  
To: qrp-l mailing list <qrp-l@Lehigh.edu>  
Subject: [57455] Re: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr  
Message-ID: <384BC0F9.4E82035D@earthlink.net>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

I have repaired a few CB based rigs that had low audio or audio that would go very low or silent after a few minutes.

I generally suggest that radios under warrentee be done by the proper shop.

That said;  
Many of these rigs use an audio amp IC with the output going through an electrolytic cap to the speaker to ground. When this cap shorts (they are usually rated for the voltage needed with no headroom) the amp is overloaded and often gets hot enough to melt the solder. Melted solder = low or no audio, solder cools and it may work again.

When I replace these caps I go to 25v rated units if there is enough room.

I hope this helps someone.

michael N6CHV

"Barry L. Geipel - AD6HR" wrote:

>  
> Thanks for the great info. My HTX-10 is already back to  
> Radio Shack for repairs. Saturday morning, just two days after  
> getting the rig, the audio level dropped to the point that I could  
> hardly hear anything.

-----

Date: Mon, 6 Dec 1999 14:09:12 -0500  
From: "Richard E. Robinson" <rerobins@email.uncc.edu>  
To: qrp-l@lehigh.edu  
Subject: [57456] FOX: KF4AR Fox Announcement 12/09 UTC  
Message-ID: <v03102802b471b387a61d@[152.15.144.71]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"

KF4AR, the Carolina Fox, will be operating from 0100 to 0300 UTC Dec. 9, 1999 which is 2000 - 2200 EST Dec. 8, 1999.

I'll be operating +/- 7.040 depending on the QRM here in NC. Most likely I will be around 7.042 but I may have to dip below 7.040 so keep looking if you don't find me at first.

RIT will be use here but I'll be sure to check my operating frequency for any non-RIT rigs.

My rig is a K2 and the antenna is a 150' long wire up 40'.

72 and good luck,

Rick kf4ar

-----  
Date: Mon, 6 Dec 1999 12:42:02 -0700 (MST)  
From: "Paul Harden, NA5N" <na5n@rt66.com>  
To: qrp-l@lehigh.edu  
Subject: [57457] QRP-L O-scope tutorial  
Message-ID: <Pine.SUN.4.10.9912061237510.13470-1000000@shell.rt66.com>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

Gang,  
Tom Whalen's post inquiring about my oscscope series reminded me perhaps it is time to post it again. It's been over a year since last posted. So for those of you who have recently acquired an oscilloscope, or new to QRP-L, here it is again.

It is being sent in 4 posts (SCOPE1, SCOPE2, etc.) to break it down into smaller, more manageable pieces. Hope you find it useful.

72, Paul NA5N

-----  
Date: Mon, 6 Dec 1999 12:43:01 -0700 (MST)  
From: "Paul Harden, NA5N" <na5n@rt66.com>  
To: qrp-1@lehigh.edu  
Subject: [57458] SCOPE-1  
Message-ID: <Pine.SUN.4.10.9912061242070.13470-100000@shell.rt66.com>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

OSCILLOSCOPES - BASIC USE AND MEASUREMENTS  
by Paul Harden, NA5N

PART 1 - BASIC DESCRIPTION, CALIBRATION AND CONTROLS  
-----

NOTE: This is a text version of an article appearing in the Summer 1997 issue of "QRPP." The article contains numerous illustrations and photos of oscilloscopes displays, which unfortunately can not be included in a text file.

#### GENERAL O-SCOPE DESCRIPTION.

THE VERTICAL INPUT is applied to the vertical input amplifier, which is quite sensitive, designed for a 25-50mV input. For larger inputs, the signal is routed through attenuators comprised of simple voltage dividers. These attenuator dividers is what forms the VERTICAL SENSITIVITY, calibrated in mV/division or V/div. An INPUT COUPLING switch selects DC or AC coupling, and sometimes a GROUND position. The output of the vertical input amplifiers is a differential signal, amplified up to high voltages and applied to the CRT (cathode ray tube) vertical plates for deflecting the beam in the vertical axis.

THE HORIZONTAL AMPLIFIERS are driven by an internal sweep generator, amplified to a high voltage and applied to the CRT horizontal plates for deflecting the beam in the horizontal axis ... that is, the sweep that moves the beam from left-to-right.

Thus, for a proper oscope display, such as displaying a sinewave, it is a combination of moving the trace from left to right to show TIME, and up-and-down to show MAGNITUDE.

THE SWEEP GENERATOR is a constant current source charging a capacitor to make a linear sawtooth waveform. The value of the capacitor will determine the time it takes to eventually move the beam across the screen, and is selected by the HORIZONTAL SWEEP control, calibrated in seconds, mS, uS (or nS) per division. The faster the beam moves across the screen, the higher the frequency that can be displayed. An important task of a scope is to display a stable waveform, which is done by starting the sawtooth sweep at exactly the same time in respect to the input signal. A switch labeled TRIGGER SOURCE determines what initiates the sweep. In the INTERNAL position, a sample of the input signal from the vertical amplifiers is used, and when it reaches a certain level, WOOSH, the sweep occurs. In the AUTO mode, the sweep is free running and not necessarily synchronized with the input signal. In LINE position, the sweep is triggered off of 60-Hz from the power supply (useful for synchronizing to TV/VCR signals), and EXTERNAL the sweep is triggered from an external input applied to a BNC (on the front or the back of the scope).

OTHER FEATURES your scope may have are:

- \* Two vertical input channels for dual-trace operation
- \* Two separate time bases for delayed sweep operation
- \* Various modes to display the input signals (alternate, chopped, A+B added, invert B, A intensified by B, etc.)
- \* Built in calibrators

#### CALIBRATING YOUR SCOPE.

Likely, you obtained your scope from a hamfest, the company junk bin, etc. The first thing you should do upon acquiring a scope is to check its calibration.

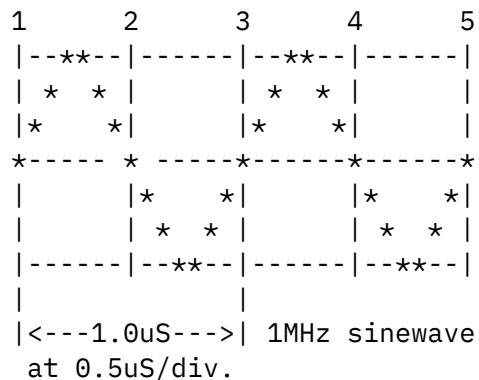
THE VERTICAL AMPLIFIERS can be checked with a known voltage source, such as a 9v battery. Measure the battery output with an accurate voltmeter. Let's say it's exactly 9v. Set the input coupling to the GND position (0v) and move the trace to the bottom division. Switch the input coupling to DC and set the attenuators to 2v or 5v/div. to give a nearly full scale deflection. For example, if your scope has four vertical divisions, setting the attenuators to 2v/div. would be 8V full scale deflection, and at 5v/div., full-scale would be 20V. With the 9v battery applied, the DC deflection should be 1.8 divisions at 5v/div. Switching to 10v/div., the deflection should be just a bit less than one division. Internal to the scope (or perhaps accessible from the outside) are adjustments for the VERTICAL AMPLIFIER GAIN. Adjust this pot for the proper deflection described above. The procedure can be repeated with a 1.5v battery for the lower sensitivity ranges (which you'll be using more of the time anyway).

Also note that when you adjust the Vertical Amplifier Gain adjustment, the 0v (ground) reference on the bottom division may also shift. So

after each adjustment, reposition the trace on the bottom division for 0V input, then recheck the trace position for the 9V or other test voltage you are using to calibrate against. It takes a few times going back and forth to get it right.

THE HORIZONTAL AMPLIFIERS should be checked/calibrated using a signal generator. For example, a 1 MHz signal has a period of 1uS per cycle. Setting the SWEEP RATE to 1.0uS/div., a 1 MHz signal should take EXACTLY one division per cycle. Ensure the horizontal WIDTH control is set so the beam starts at the first division and ends on the last one, and the HOR SWEEP VERNIER (fine adjustment) is in the OFF or CAL position. If the sweep rate appears incorrect, an internal SWEEP GAIN ADJustment can be set for proper display of the test signal. This should be repeated at different frequencies, and some scopes will have a separate adjustment for each time base setting. Once the Sweep Gain has been set as above for 1MHz = 1 cycle per division, go to the next faster sweep speed, which should

usually be 0.5uS/div. In this case, the 1MHz sinewave should take TWO divisions to display a complete cycle, as shown in the quasi-illustration to the right. Trigger the scope for a stable display so that the zero crossings or the peaks are on the vertical graticle lines. The illustration shows the positive going "zero-crossings" occurring on the vertical graticles labeled "1" - "3" - "5".



For proper zero-crossings, the waveform should be centered between two divisions, also as shown in the illustration.

If you can't find the adjustment to tweak the horizontal gain, you can shrink or stretch out the test signal to the desired divisions using the HORIZONTAL WIDTH control, usually a front panel control. Then you can mark on the front panel where the HOR WIDTH control must be at each SWEEP setting for proper calibration.

Without checking and calibrating the accuracy of your time base sweep, time and frequency measurements performed on your scope may contain significant errors.

If you don't have a signal generator, you might use the audio from a receiver tuned to WWV. The various tones transmitted throughout the minute and hour are listed in various references. And of course, there's always 60-cycles floating around the ham shack somewhere!

MAIN OPERATOR CONTROLS.

INTENSITY - controls the brightness of the beam. Adjust for a clear trace, but not too bright. A very bright trace can cause permanent damage to the CRT, particularly on a well-used scope.

FOCUS - adjusts the beam for the thinnest and sharpest display.

VERT & HOR POSITION controls the vertical and horizontal position of the trace.

VERT VOLTS/DIV - controls the vertical sensitivity of the display, i.e., how many volts or mV per division.

VERT VERNIER - adjust the vertical sensitivity in fine steps. Should be off (or CAL position) for calibrated measurements.

TIME BASE/HOR SWEEP SPEED - sets the horizontal sensitivity, i.e., how many second, mS or uS per division.

HOR VERNIER - adjusts the horizontal sensitivity, or sweep speed, in fine steps. Should be in OFF or CAL for calibrated measurements.

#### OTHER ADJUSTMENTS YOU MAY FIND:

ASTIGMATISM - With the scope INTENSITY and FOCUS properly set, this adjustment compensates for the curvature of the CRT tube by making it in-focus across the entire sweep. If your trace is out-of-focus in certain areas, but in-focus elsewhere, the ASTIGMATISM needs to be adjusted.

TRACE ROTATION - is a small coil around the CRT that skews the trace to ensure it is perfectly horizontal. Set the scope to GND, free-run the sweep and adjust the vertical position so the beam is along a graticle (division) line. Adjust the TRACE ROTATION until the beam is perfectly parallel to the horizontal graticles. On scopes without this adjustment, leveling the trace is performed by loosening the CRT mounting brackets and physically rotating the CRT tube for a level trace, then re-tightening the CRT brackets.

!!! WARNING!!! HIGH VOLTAGE ARE PRESENT AROUND THE CRT TUBE. USE EXTREME CAUTION WHEN PERFORMING THE ABOVE PROCEDURE.

DC BALANCE - is a DC offset in the vertical amplifiers that causes a shift in the trace baseline when changing vertical scales. It is most obvious when displaying AC signals. For example, you are displaying a 10Vpp sine wave, centered on the center graticle at 2v/div. Changing to 5v/div, the sine wave shifts away from the center graticle, up or down ... that is, it assumes a DC bias error in the vertical amplifiers. The DC BAL is adjusted until no shift occurs when changing vertical scales. Admittedly, setting the scope for perfect dc balance on all scales is an exercise in patience! DC BAL is often an internal adjustment, or on the rear panel. On dual trace scopes, there will be one for each channel.



HV ADJUST - is the high voltage that controls the intensity of the trace. Turn up the INTENSITY control to its brightest position, then adjust the HV ADJ for a trace slightly brighter than normal intensity. Return the INTENSITY for normal brightness. The INTENSITY control now has the proper range. On some scopes, it takes a little piddling around to properly set the HV ADJ, intensity and focus for proper operation. The HV ADJ is often an internal adjustment.

!!! If you adjust the HV ADJUST, you may also have to recalibrate the VERTICAL and HORIZONTAL GAINS as described above for proper calibration (V/division and time/division accuracy).

An oscilloscope is an amazing instrument for making voltage, time and frequency measurements ... however, all of these measurements are worthless unless you ensure the vertical and horizontal stages of your scope are reasonably calibrated. The time to calibrate your scope will be worth the ease and reliability of subsequent measurements you will make.

END OF PART 1

72, Paul Harden, NA5N  
NA5N@Rt66.com

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Date: Mon, 6 Dec 1999 12:43:50 -0700 (MST)  
From: "Paul Harden, NA5N" <na5n@rt66.com>  
To: qrp-1@lehigh.edu  
Subject: [57459] SCOPE-2  
Message-ID: <Pine.SUN.4.10.9912061243080.13470-100000@shell.rt66.com>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

OSCILLOSCOPES - BASIC USE AND MEASUREMENTS  
by Paul Harden, NA5N

PART 2 - LET'S MAKE SOME MEASUREMENTS  
DC voltages, AC voltages, time period and frequency

-----  
NOTE: This is a text version of an article appearing in the Summer 1997 issue of "QRPP." The article contains numerous illustrations and photos of oscilloscope displays, which unfortunately can not be included in a text file.

#### NOTE ON LIMITED BANDWIDTH SCOPES.

Today's scopes have 500MHz bandwidths or higher. Likely your scope is much less than that. A limited bandwidth scope is still very useful to the QRPer. Say the bandwidth of your scope is 5MHz. This does not mean you can't see a 7MHz (40M) signal ... it just means that the calibration of the scope is no longer valid. The peak-to-peak value of the display is not correct and much smaller than it really is, and the sweep rate may be in error. But still, you may likely be able to resolve individual cycles higher than the cited bandwidth to a certain degree, and make the gain and phase measurements that follow (since they are based on RATIOS).

Most of the examples in this article explore many regions of a QRP rig without the benefit of any great bandwidth. Experiment with your scope to learn its limitations.

!!! IF POSSIBLE, SPEND THE MONEY TO GET A GOOD SCOPE PROBE AND MAKE MEASUREMENTS WITH A GOOD GROUND CONNECTION TO GET THE MOST OUT OF THE BANDWIDTH YOU HAVE.

#### BASIC MEASUREMENTS.

It is assumed you have your scope relatively calibrated as described in Part 1, and familiar with the front panel controls. For the sake of the following discussions (since illustrations can not be included), it is assumed the scope has 4 vertical and 4 horizontal divisions.

#### DC VOLTAGES.

Say you want to check the T-R switch (Transmit-Receive) in your QRP rig. Usually this will be a transistor (or inverter gate, such as in the 38-Special). The key line goes to the base, which is pulled HI to some positive voltage (on key UP), and goes LO to ground when the key is DOWN (or closed).

Setup your scope for DC voltage at 2v/div. and a slow sweep speed (say 100mS/div). Set the trace so the bottom graticule (division line) is 0v. Place the scope lead on the T-R switch transistor base. Say the trace deflects two divisions. This would be 4vdc bias on the base. Now close the morse code key. The trace should drop to 0v.

The purpose of the T-R switch is to generate a POSITIVE voltage on key down, which is taken from either the collector or the emitter (depending upon the circuit configuration). Say it comes off the emitter. Move the scope probe to the emitter. Now you should have about 0v with the key UP, and with the key DOWN, the voltage should jump to some positive voltage, often +12v. In this case, the trace

will go off the top of the screen. Change the scope to 5v/div. Re-verify that 0v is the bottom graticle. On key DOWN the trace jumps up 2 divisions. The key DOWN voltage is thus +10v. If the emitter is "stuck" at +10v on both key up and down, the transistor is not switching. If the base signal above is correct, then likely the transistor is bad.

While this test could be done with a DVM, the integration time is slow requiring long key downs to get the proper voltage. A scope will also show you how clean the switching is, or if there is an AC voltage (or RF noise) riding on the T-R voltage.

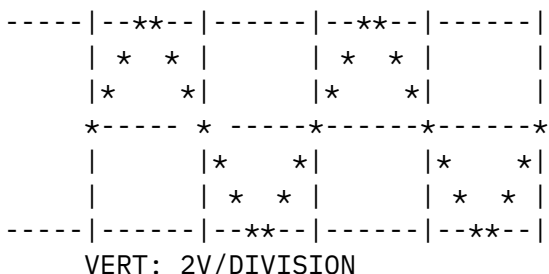
Scopes are thus good DC voltmeters, with about a 5% reading accuracy.

#### AC VOLTAGES.

Here is where a scope pays for itself by making AC voltage (and frequency) measurements. You must remember that AC voltage displayed on a scope is PEAK-TO-PEAK VOLTAGE, while a voltmeter or DVM measures AC voltage in RMS (root mean square). RMS voltages read on a DVM will be ABOUT 1/3rd the peak-to-peak voltage (Vpp) shown on a scope. Or specifically,

$$V_{rms} = .707 \times V_{peak} = 0.5(.707 \times V_{pp}) = .35 \times V_{pp}$$

If the signal on your scope looks like that in the quasi-illustration, at 2V/division, then the signal would be 4V peak-to-peak (4Vpp), or 1.4Vrms if read on a DVM or voltmeter.



VERT: 2V/DIVISION

For example, let's measure the output voltage and frequency of the sidetone oscillator in your QRP rig. Setup the scope for 1v/div, AC volts, and a sweep speed of 1mS/div. Connect the scope probe to the audio output of your rig and set the volume control on key DOWN so the audio sinewave is 2 division peak-to-peak. This would then be 2Vpp AC, and should look similar to the illustration above.

#### AC FREQUENCY MEASUREMENT.

With this same waveform, we might as well see what frequency our sidetone or transmit-offset is at. Most operators prefer the sidetone to be about 700Hz. With the same setup as above, trigger the scope for a stable waveform and the time base sweep to display 2 or 3 cycles. Center the waveform on the center horizontal graticle so the sinewave goes one division above, and one division below the center graticle. Now move the HOR POSition so the first "zero

crossing" of the sine wave is on the first or second vertical graticle. With this setup, zero-crossing would be where the sine wave crosses the center horizontal graticle. Now measure the time it takes to make one complete sine wave, from one zero-crossing (sine wave going positive) to the next positive going zero crossing.

Say one complete sine wave takes one and half horizontal divisions. At 1.0mS/div., this would be 1.5mS per cycle. Frequency is the reciprocal of time, such that the sidetone frequency is:

$$f = 1/t = 1/1.5\text{mS} = 667 \text{ Hz}$$

(Sidetone frequency is the tone heard on key DOWN). This may be a little low to your liking. To raise it to 700Hz, calculate the period of 700Hz, which is  $t = 1/f = 1/700 = 1.4\text{mS}$ . At 1.0mS/div, you can adjust your XMIT OFFSET on key down until zero-crossings (or the positive peaks) are 1.4 divisions apart. This will be 700 Hz. (The XMIT OFFSET is not adjustable in all rigs ... such as the 38-Special. In this case, it usually requires changing the value of a capacitor on the XMIT MIXER and usually discussed in the instruction manual).

QUALITY OF THE WAVEFORM is another feature of a scope that is unsurpassed, since you are "seeing" the waveform in real time. For example, say the audio output from your QRP rig is not a clean sine wave, that is, it has a slant to it, or the rise time takes longer than the fall time. This could be due to improper time constant on the audio amplifier coupling capacitors or improperly biased amplifiers. Or, say the audio output sine wave is flattened at the top, looking sorta like a square wave then a sine wave. This would be a raspy sounding sidetone, and due to the audio power amplifier being overdriven and in gain compression (clipping). You should be able to see this effect by turning the volume control to its maximum level, overloading the output audio amplifier (unless your QRP rig has anemic audio like some).

The o-scope is an invaluable tool for detecting and diagnosing such distortions and impurities in the signal quality. The audio output of a QRP rig, whether the sidetone or an on-the-air signal, should be a fairly pure sine wave. If not, something is wrong, from a poor product detector action, poor filtering after the product detector, poor coupling capacitors, or severe noise being introduced into the audio at some point.

By tuning in an on-the-air signal and plotting the Vpp at different audio frequencies, you can plot the filter response of your QRP rig. This will be discussed in detail in a later section. You can also adjust your BFO on the product detector for the maximum Vpp of

the received signal for centering the signal in the filter passband. Note how these important tests and adjustments (sidetone, filter response and setting the BFO) are a few of the things that can be done on a scope with a very limited bandwidth ... since you're not looking at anything beyond the audio range.

Once you get comfortable making the above voltage, time and frequency measurements, you might want to go through your QRP kit with the schematic and record the various DC and AC voltages and waveforms at pertinent locations in the circuit. This will be a great aid in the future should your rig develop a problem. NOTE however, that signal levels from the receive mixer through the IF crystal filters are VERY weak and can not not be seen on even an excellent scope. The main exception to this would be the local oscillator (LO) drive on pins 6 and 7 on a NE602. They are usually in the order of 100mVpp.

!!! NOTE: You can't hurt anything by probing around the circuit of your QRP rig. The biggest mistake made by beginners is to let the ground lead come loose and drag along the tops of components, which can short out the power supply or damage a component ... OR when putting the scope probe on an IC pin, to slip and let the probe touch two pins at once. This will short out the two pins, which in some cases, could cause damage to the IC. For example, on a NE602, measuring the Vcc voltage on pin 8. A slip to Pin 7 (the OSC input) could destroy the internal oscillator if the pin 8 to 7 short persisted a second or two.

END OF PART 2

72, Paul Harden, NA5N  
NA5N@Rt66.com

-----  
Date: Mon, 6 Dec 1999 12:44:46 -0700 (MST)  
From: "Paul Harden, NA5N" <na5n@rt66.com>  
To: qrp-l@lehigh.edu  
Subject: [57460] SCOPE-3  
Message-ID: <Pine.SUN.4.10.9912061243570.13470-1000000@shell.rt66.com>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

OSCILLOSCOPES - BASIC USE AND MEASUREMENTS

by Paul Harden, NA5N

### PART 3 - LET'S MAKE SOME MEASUREMENTS

#### Amplifier gain and insertion loss

-----

NOTE: This is a text version of an article appearing in the Summer 1997 issue of "QRPP." The article contains numerous illustrations and photos of oscilloscope displays, which unfortunately can not be included in a text file.

#### AMPLIFIER GAIN

The gain of an amplifier can be measured in terms of VOLTAGE GAIN, which is simply  $A_v = V_{out}/V_{in}$ . For example, if the input to an amplifier is 1Vpp, and the output is 4Vpp, then the amplifier has a VOLTAGE gain of 4.

GAIN IN DB is often more useful and is how the gains of amplifiers are usually expressed. With dB (decibels), everytime you DOUBLE the AC voltage, you ADD 6dB of gain. It is the RATIO of output to the input, and this RATIO is easy to measure on a scope, even for signals that exceed the cited bandwidth of your scope to some extent.

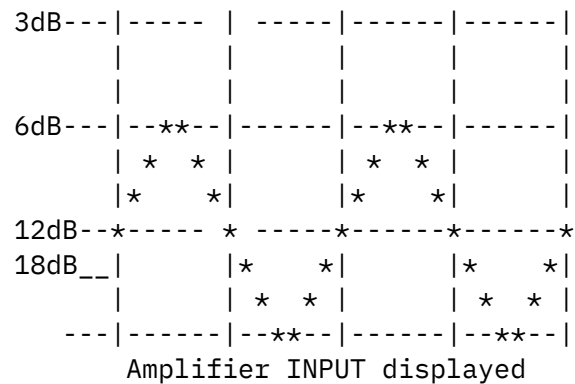
Say you just built a single transistor amplifier to boost the audio signal before the final audio amplifier (usually an LM386). It is often easier to start with the OUTPUT for measuring amplifier gain. Inject an audio signal into the amplifier (transistor base). Place the scope lead on the transistor COLLECTOR, and set the scope so the output waveform is exactly 4 divisions peak-to-peak. Do not disturb oscscope settings.

Now move the scope leads to the amplifier INPUT, the transistor's base. You will of course have a much smaller signal, and the ratio of the input to the output will be the gain in dB. For example, say the input signal is 2 divisions peak-to-peak. This would be 6dB of gain, since you are DOUBLING the signal in the amplifier. Everytime you DOUBLE the voltage, it is 6dB of VOLTAGE gain. If the input signal is 1 division peak-to-peak, then the amplifier gain is 12dB. (With the output still at 4Vpp or 4 divisions). Going from 1 division to 2 division is 6dB gain; going from 2 divisions to 4 divisions is 6dB gain. Therefore going from 1 division to 4 divisions is 12dB (6dB + 6dB).

This illustration shows how to measure Amplifier GAIN on an oscscope. FIRST, adjust

|        |       |       |       |       |
|--------|-------|-------|-------|-------|
| 0dB--- | ----- | ----- | ----- | ----- |
|        |       |       |       |       |
|        |       |       |       |       |

the scope so the amplifier OUTPUT is 4 DIVISIONS peak-to-peak. THEN, switch to the INPUT, and position the waveform so the NEGATIVE peaks are on the bottom division, as shown. Where the POSITIVE peaks of the input occur will be the GAIN in dB by reading the scale on the left. You may want to make such a scale and attach it to the side of your CRT screen for making quick measurements in dB's.



IF YOU WANT TO DO IT MATHEMATICALLY ...

$$V_{out} = 4V_{pp}$$

$$V_{in} = 1V_{pp}$$

$$\text{Therefore, voltage gain } A_v = V_{out}/V_{in} = 4v/1v = 4$$

and gain in dB is:

$$\text{dB} = 20\log(A_v) = 20\log(4) = 20(0.602) = 12\text{dB}$$

OR AS SHOWN DIRECTLY ON THE O-SCOPE AS DESCRIBED ABOVE.

Since this is a relative measurement (a RATIO), the absolute value of  $V_{in}$  or  $V_{out}$  does not need to be determined.

INSERTION LOSS.

In some circuits, such as filters or attenuators, the LOSS in dB needs to be determined, and this is called the INSERTION LOSS. It is determined the same way as amplifier gain, except the INPUT will be GREATER than the OUTPUT since there is a LOSS involved.

For example, with a signal generator connected to your QRP rig antenna input, you want to measure the insertion loss of your IF crystal filter. At the filter input, you can just barely squeek out 2 divisions of input signal on your scope at its most sensitive setting. (Perhaps due to exceeding the scope's bandwidth). The output from the crystal filter is 1 division, or a 50% reduction. The insertion loss would be 6dB (since if the power were HALF, or 50%, it would be a 6dB LOSS).

OR MATHEMATICALLY USING SCOPE DIVISIONS:

$$\begin{aligned} \text{Insertion loss (dB)} &= 20\log(V_{in}/V_{out}) = 20\log(2 \text{ div.}/1 \text{ div.}) \\ &= 20\log(2) = 20(.30) = 6 \text{ dB} \end{aligned}$$

If the output were 1.5 divisions,

$$\text{Insertion loss (dB)} = 20\log(2 \text{ div}/1.5 \text{ div}) = 2.5 \text{ dB}$$

Again, you are determining the insertion loss of a circuit element from the RATIO of input to output. You do not need to make absolute measurements. So if the frequency is beyond the bandwidth of your scope, as long as you can get enough vertical deflection to measure it's magnitude in some terms of divisions, and able to see the signal either get smaller or larger, you can estimate the gain or loss in dB fairly accurately. If the signal DOUBLES, it is 6dB; if it is about half of doubling, it is about 3dB; if the change is barely noticeable, it is around 1dB. This is usually sufficient for determining if circuit elements are working properly. For example, using the insertion loss of an IF crystal filter as above, if you determine the loss to be a few dB, the crystal filter loss is acceptable. If it is much more than around 6dB, you may have a problem. And if you can't see any output, you have a real problem. (Loss is about 1 to 1.5 dB per crystal in filter). Same with checking the gain of amplifiers. It's not important if the gain is 6.2 dB or 6.5 dB, but whether the gain is ABOUT what you'd expect. If the output of an amplifier is ABOUT DOUBLE the input, you have 6dB of gain. If the output is just a bit larger than the input (or the same) ... then you've got a problem (no or little gain occurring).

With a little practice on your o-scope, you will learn to recognize approximate gains and losses in dB's very quickly from the oscscope display.

You might want to go through your QRP kit with the circuit and measure the gains through different stages. If your rig has an MC1350 IF amplifier, what is it's gain with a strong signal vs. a small signal to see if the AGC is working properly. What is the gain of the LM386 audio output amplifier? With larger bandwidth scopes, check the gains of the RF driver transistor and output PA transistor. Knowing what these gains are could help troubleshoot the circuit later should a problem develop.

END OF PART 3

72, Paul Harden, NA5N  
NA5N@Rt66.com

-----  
Date: Mon, 6 Dec 1999 12:45:30 -0700 (MST)



From: "Paul Harden, NA5N" <na5n@rt66.com>  
To: qrp-1@lehigh.edu  
Subject: [57461] SCOPE-4  
Message-ID: <Pine.SUN.4.10.9912061244510.13470-100000@shell.rt66.com>  
MIME-Version: 1.0  
Content-Type: TEXT/PLAIN; charset=US-ASCII

OSCILLOSCOPES - BASIC USE AND MEASUREMENTS  
by Paul Harden, NA5N

PART 4 - MEASURING PHASE SHIFTS

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NOTE: This is a text version of an article appearing in the Summer 1997 issue of "QRPP." The article contains numerous illustrations and photos of oscilloscope displays, which unfortunately can not be included in a text file.

MEASURING PHASE SHIFTS

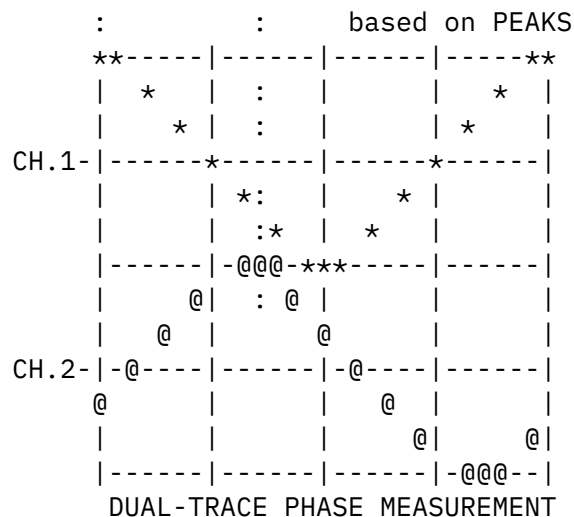
Phase relationships between two signals at the same frequency can be measured with 2-5 degree accuracy with a scope, although more suited for a dual-trace scope. The REFERENCE signal is applied to CH. 1 and the signal to be phase measured to CH. 2. For proper phase measurements, ensure your dual trace display is in the CHOPPED mode, not ALTERNATE mode. (Alternate mode can effect the triggering position for the second, or CH.2 sweep).

There are many methods to do this. One is to stretch out the signal so it takes 4 full divisions, so each division is 90 degrees of phase. By measuring from a common point on one signal to the other (zero crossings or from the peaks), the phase can be measured.

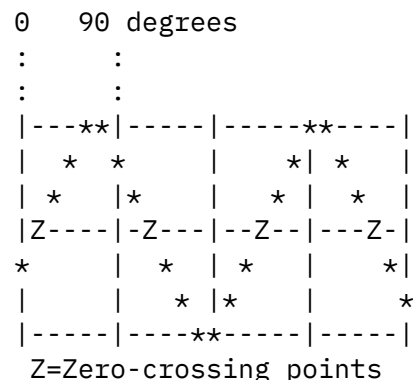
For example, say you are making a phased array antenna system, in which one feedline must cause a 90 deg. delay. You calculate the electrical length for a quarter wavelength [ $L = (246/f) \times \text{velocity factor}$ ] and cut the coax to that length. You are now working on blind faith that you have exactly 90 degrees. With a scope, you can measure it fairly accurately by injecting a signal into one end with a signal generator (at the frequency of interest) and a 50-ohm load on the other. Connect the scope CH.1 to the coax input (signal generator end) and CH.2 to the load end and measure the phase. Trigger the scope and move the horizontal position and/or the time base vernier so the positive peak of the CH.1 sinewave is on the first vertical graticle line and the

|                                |      |       |             |
|--------------------------------|------|-------|-------------|
| second positive peak is on the | :    | :     | +117 degree |
| fourth vertical graticle, as   | ---> | :<--- | Phase Shift |

shown in the illustration to the right. Now measure the phase by noting where the first positive peak on CH.2 occurs. Say it occurs about 1.3 divisions to the RIGHT of the CH.1 positive peak. Since one division is 90 degrees, using this method, then 1.3 div. x 90 deg. = 117 deg. YOUR DELAY LINE IS TOO LONG! Cut off an inch or two at a time until the CH.2 peak is one division from the CH.1 peak (or on the 2nd vertical graticule as shown in the illustration) for precise tuning of the delay line.



Another method is to make the CH.1 signal to be two divisions high, and center it between the two divisions, such that the zero-crossing points are on the middle graticule line. Where the CH.1 sinewave signal crosses zero going positive is the 0 deg. REFERENCE; the positive peak is 90 deg.; the negative going zero crossing is 180 degrees, etc. For CH.2 to be 90 degrees delayed from CH.1, the CH.2 sinewave should cross zero, going positive, right under the 90 degree peak of the CH.1 signal. If the CH.2 zero crossing is farther to the right from the CH.1 positive peak, the phase shift is MORE than 90 degrees. Back to the example of the coaxial delay line, you would cut an inch or two at a time until the CH.2 zero crossing is directly underneath the CH.1 positive peak (the 90 degree point).



And still yet another method of comparing the phase between two signals on a dual-trace scope is to accurately measure the period it takes for one complete sine wave on the CH.1 reference channel. Say it is 140nS (that would be 7.14 MHz, by the way). Now say the CH.2 signal is 50nS delayed from the CH.1 signal. The phase shift would be:

$$\text{Phase} = 50\text{ns}/140\text{ns} \times 360 \text{ degrees} = 129 \text{ degrees}$$

POSITIVE OR NEGATIVE PHASE SHIFT?

One thing you must remember is how to "read" phase shifts on an oscilloscope. When comparing two signals as described above, remember that if the CH.2 signal peak is to the RIGHT of the CH.1 peak, then the CH.2 signal is OCCURRING LATER IN TIME than the CH.1 signal, because time is traveling from left to right. If the CH.2 peak is say 90 degrees to the LEFT of the CH.1 peak, then the CH.2 signal occurred in time BEFORE the CH.1 signal. This would then be a -90 degree phase shift, or 270 degrees. Think about this carefully before you start cutting the coax on that delay line!

#### PHASE MEASUREMENTS ON A SINGLE TRACE SCOPE

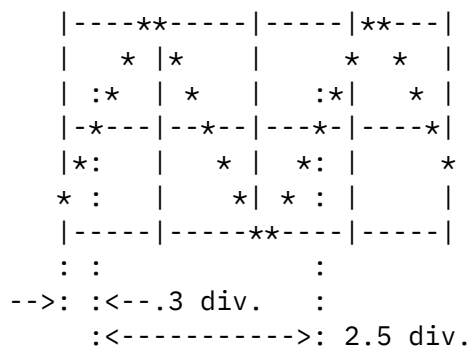
Phase measurements can be made on a single trace scope as well. First, connect the REFERENCE signal, using a BNC "T", to both the VERTICAL INPUT to the scope and the EXTERNAL TRIGGER and select EXTERNAL as the trigger SOURCE. Adjust the TRIGGER LEVEL so the zero-crossing occurs at the beginning of the trace on the first vertical graticule. Now remove the reference signal from the scope's vertical input (but NOT the external trigger input) and connect the signal to be phase measured to the vertical input ... WITHOUT altering the time base or trigger level. The sinewave of the signal to be tested should be on the CRT, with the trace being triggered from the external trigger input, or the reference signal.

The sinewave now on the CRT

likely will not have it's zero-crossing starting at the first vertical graticule as the reference signal did, but some place else. On the illustration to the right, the zero crossing occurs about 0.3 divisions to the RIGHT. This can now be converted to the phase angle in degrees. In the illustration, one complete cycle takes 2.5 divisions, and the phase delay from the reference is 0.3 div.

The phase shift is therefore:

$$\begin{aligned}\text{Phase shift} &= 0.3 \text{ div} / 2.5 \text{ div.} \times 360 \\ &= 0.12 \times 360 = 43 \text{ degrees}\end{aligned}$$



The SINGLE-TRACE scope method is a little easier to do if you make the sine wave of the reference to be 4 divisions for one cycle, thus making 90 degrees per division. The phase angle can be guestimated a little quicker with the signal to be phase measured.

It is noteworthy to mention that the above examples, measuring the phase through a delay line at 7 MHz, would require an oscilloscope with a 20MHz or higher bandwidth, if for no other reason, then just assure that the time base is fast enough to display 1 or 2 sinewave cycles

on the CRT. If at your fastest sweep speed, the 7MHz signal is displayed as many cycles, then obviously the accuracy that you can determine the phase angle will be highly degraded.

#### LOW FREQUENCY PHASE SHIFTS ON A LIMITED BANDWIDTH SCOPE.

If your scope has a limited bandwidth of only a few MHz or less, there are still useful phase measurements that can be performed.

One interesting experiment is to measure the phase shift of the audio signal at different frequencies as it travels through the stages in a CW audio filter. This is done by putting the input to the CW audio filter on CH.1 and the output on CH.2. What is the phase shift of the wanted vs. unwanted frequencies? Recall that an audio filter works by cancelling out (180 degree phase shift) the unwanted signals, while re-enforcing (0 degrees) the frequencies you wish to pass. There will only be one audio frequency for which there is a 0 degree phase shift. This will be the "pole frequency" of the active filter, or the frequency you wish to have the maximum gain. For CW QRP rigs, this should be around 700 Hz.

And finally, on a limited bandwidth scope, the phase angles of higher frequencies can be determined by applying the reference signal to the vertical input and the signal to be phase measured on the external horizontal input. This will form a lissajous pattern, the angle or tilt will signify the phase angle.

END OF PART 4

-----  
This is the last part of this series of articles on OSCOPES posted to QRP-L. There will be another series on scope measurements posted in the future (many months) that will include some advanced techniques, such as measuring sideband rejection, tuned circuits, filter responses, group delay, VCO phase noise, etc. This will be the contents of part 2 of the oscscope article for the Winter QRPP. I haven't written it yet or made hardcopies of the scope displays. But following publication in QRPP, I will convert it to a text file and post it to QRP-L as I did this one.

PS - making those waveform illustrations really sucked swampwater!

72, Paul Harden, NA5N  
NA5N@Rt66.com

-----  
Date: Mon, 06 Dec 1999 14:57:31 EST  
From: Rod J Johnson <ka7you@juno.com>  
To: QRP-L@LeHigh.EDU  
Subject: [57462] HB:Antenna advice needed  
Message-ID: <19991206.130118.9879.4.ka7you@juno.com>

I'm thinking of adding another antenna for general listening and operating. I have a 500+ foot spool of wire at my disposal.

My house sits near the rear corner of a triangular lot, which is about 300 feet on a side. I have access to the common densely wooded property to the rear (west) of the house, but to the east (100' or so) is the road and power lines, so I can't go very far that way.

I'd like to get some better coverage to the east, but my main antenna is a 130' dipole at 60+ feet, fed with ladderline. It is oriented NE to SW, and seems to favor California to Texas (no offense guys). I must add that I'm blocked to the east by a mountain which rises nearly 2000 feet above me, within the next mile to the east...so a real low angle radiator is probably not very usefull from this QTH.

Would I likely be better off to just string the wire out in a straight line to the west (end fed long-wire) through the woods? It would not be nearly as high (25' to 30' max), due to the dense tree coverage which would make it impossible to get the wire past the lower limbs.

Or would I be likely to be better off to try to get some semblance of a shorter horizontal loop or triangle here on the property where I can get it 'up'; and feed it with ladder line?

After reading much on the various antennas, now I'm even more confused than before.

I'm looking for input which might shed some light on the variables at work here, but all input is welcomed.

7 3

Rod Johnson KA7YOU from grid CN97AK near Issaquah, Wa.  
80M thru 10M with K2 s/n268 and other fine QRP rigs.  
VHF thru 1296 MHz-higher bands pending  
ARCI-QRP #7251 QRP-L #844 NWQRP #120 NorCal #2007 and others

-----  
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-----

Date: Mon, 6 Dec 1999 15:07:26 EST  
From: JFStrain@aol.com  
To: qrp-l@lehigh.edu  
Subject: [57463] Hiram Percy Maxim celebration

Message-ID: <0.c5c75afa.257d717e@aol.com>  
MIME-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Content-Transfer-Encoding: 7bit

Just got my certificate for having contacted more than the minimum number of stations signing /130 during the ARRL's HPM 130th birthday celebration and was surprised to see it endorsed for qrp operation! I don't recall that being noted in the information on the event, but think that rather cool since I did it on 20M SSB and had submitted log info that did note my power level. May just put that one on the wall!

72/73,  
John W9MIU  
QRP-L 1088 QRP-ARCI 8173  
Zombie 250 ARS 571  
10-10 71063

-----  
Date: Mon, 06 Dec 1999 14:17:33 -0600  
From: Jim Giammanco <giamman@rouge.phys.lsu.edu>  
To: qrp-l@Lehigh.edu  
Subject: [57464] HB: Preparing for CW mod to HTX10 RS 10 m xcvr  
Message-ID: <3.0.1.32.19991206141733.007ab330@rouge.phys.lsu.edu>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"

I've traced the circuit inside the microphone of the HTX10 to determine what kind of switching may be needed. The .gif file (8K) is at

<<http://www.qsl.net/n5ib>>

Usual disclaimers... my eyes are in their second half-century and I had to take my bifocals off just to see the traces.

But the circuit seems to make electrical sense. So maybe it's right :^)

I've manhattaned a twin-T oscillator at about 750 Hz (from the '99 ARRL HB). Need to add a buffer stage before injecting it into the mic line. Also need to think about shaping the keyed waveform. Is anyone else getting farther along than this rather pokey attempt in putting your HTX10 on CW??

73  
Jim N5IB  
Jim Giammanco, Instructor (504) 388-8278  
LSU Department of Physics & Astronomy (504) 388-5855 fax  
202 Nicholson Hall giamman@rouge.phys.lsu.edu  
Baton Rouge, LA 70803-4001

-----  
Date: Mon, 06 Dec 1999 15:40:53 -0500  
From: Russ Hines <radioruss@fuse.net>  
To: w6toy@erols.com  
Cc: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>  
Subject: [57465] Re: Cushcraft good news/bad news venting  
Message-ID: <384C1F55.BFE272CA@fuse.net>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Bruce Muscolino wrote:

>  
> Ease up on the manufacturers. Try to see it from their side of the  
> table. They could all go away, and then where would we be!

Learning more, building more... ;-)

73,  
Russ  
WB8ZCC

-----  
Date: Mon, 6 Dec 1999 13:52:06 -0700  
From: zmola@campbellsci.com  
To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>, n5ib@juno.com  
Subject: [57466] Re: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr  
Message-ID: <199912062045.UAA28189@demeter.campbellsci.com>  
MIME-Version: 1.0  
Content-type: text/plain; charset=US-ASCII  
Content-transfer-encoding: 7BIT

Date sent: Sat, 04 Dec 1999 20:46:26 EST  
Send reply to: n5ib@juno.com  
From: n5ib@juno.com  
To: "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>  
Subject: HB - Preparing for mods to HTX-10 Radio Shack 10 m xcvr  
Originally to: qrp-1@Lehigh.edu

> Ahoy all HTX-10 tinkerers,

<snip>

> Next step is to brew up the 800 Hz oscillator and divide its output  
> voltage down to 1 few mV and feed it to the mic input. I'll keep the gang

> posted.... I'll draw a decent schematic of the mic and post it on my web  
> site next week. I want to try and have it ready to go for the 10 m  
> contest next week.

<http://www.geocities.com/SiliconValley/2775/mcwintro.html>

I havn't tried it yet, but it looks like what the Doctor ordered.

Carl  
AC7BB

Carl  
zmola@campbellsci.com

-----  
Date: Mon, 06 Dec 1999 09:49:31 -0800  
From: Ed Loranger <we6w@qsl.net>  
To: qrp-1@lehigh.edu  
Subject: [57467] QRP Net reports.  
Message-ID: <384BF72B.49051B43@qsl.net>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Good day, gang. I worked as NCS for three nets this weekend  
so will combine the reports.

One item made this weekend tougher and that is that the repitive  
typing at work has my thumbs weakend and I've really cut back  
on using my hands. I did stay off the radio except for the  
nets. At times I couldn't move my thumb but I got by the code OK.

WSN-40: About the usual 11 checkins and decent signals  
all around.

Norcal:NCS+4 checkins. pretty much everyone was eager to  
practice on the QRQ net afterwards. We shared the usual  
WX reports and latest contest reviews and signed off after  
35 minutes.

QRQ Practice: at 0235z I dropped down to 7039 but a QR0 QS0  
there pushed us down around 7038 and change.  
We had myself, NW7DX, K7GT, AB5PC -- so 4 stations to practice  
the QRQ messages.

I created 5 messages and decided that 30 words were enough so I



only shared 3 messages.

- #1) With zippo in hand he lit the candle very carefully.
- #2) Matching Impedances quickly is one feature sought in an ATU.
- #3) Station description along with properly formatted logs are sometimes required.
- #4) Cellular telephones provide communications using technologies that are interesting to study.
- #5) Fox hunts offer skill enhancement in many areas of of communications.

Seeing these, my wife suggested some alternatives:

- #1) Put the candle back! (From Frankenstein spoof)
- #2) Matching socks is a feature sought in a husband/wife.
- #3) Appearance and nice legs are sometimes nice. (Or shirt and shoes required.)
- #4) Cellular phones are a pain in the derriaire.
- #5) (Ala Austin Powers): Oh yeah, baby. Once I find my fox, communications is truly enhanced.

I opted to stick to my original messages.

We had the time of our lives! It was a blast to up the speed after every round. We did lose K7GT and AB5PC to QSB after the first round but Ben and I got up to 40 WPM before the mistakes took too long to correct :0

We are DEFINITELY have the QRQ net again. And remember, you go at YOUR speed, YOU decide your pace and you can always pass and listen in. But be sure to check in and say hi during the NORCAL net as well.

72 until next time.

-Ed WE6W

--

-72/Ed WE6W; AR Millennium Q's=> 2317/2000 A-1 OP

<http://www.qsl.net/we6w> Santa Rosa, CA

QRP-Z#106 AR#112 HI-QRP#64 ARCI#9397 ARS#275 QRP-L#1068 Old NC#2227

-----  
Date: Mon, 6 Dec 1999 17:19:19 -0800

From: "muleskiner" <muleskiner@gateway.net>

To: <weinfurt@oak.cats.ohiou.edu>

Cc: "QRP" <qrp-l@Lehigh.edu>

Subject: [57468] Re: circuit help needed -brain not working (VERY LONG BUT INSTRUCTIONAL)

Message-ID: <000901bf4051\$171f0220\$28320f3f@oemcomputer>  
MIME-Version: 1.0  
Content-Type: text/plain;  
    charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit

Doug,

Here is some information that may help with your application. My explanation uses a transistor transistor logic (TTL) inverter example and then changes to a Schmitt Trigger to give you some ideas, but first of all light emitting diodes (LEDs) are small diodes that emit a colored light when current passes through them. When a LED is ON, it develops a forward voltage of 1.6 volts, regardless of current. Typical LEDs are specified to operate at 20 millamperes (mA), but they will glow over a wide current range. For use with TTL, a resistor of about 150 ohms is placed in series with the diode to limit the current and drop the excess voltage. Although the guaranteed output of standard a TTL inverter like the 7404 is 16 mA, it is often used to drive a LED.

A standard TTL inverter stage driving a LED includes the LED having its anode connected to a 5 volt DC supply voltage. The 150 ohm resistor connects between the LED's cathode and the inverter's output terminal. When the inverter input is HIGH, current is driven through the resistor, the LED, and the lower transistor of the inverter's totem pole output. Typically the resistor absorbs 3 volts, the LED 1.6 volts, and the inverter output voltage is 0.4 volts. Together these add up to the 5 volts DC of the supply. If the LED is ON, it indicates that the input to the inverter is a logic 1.

When the input to the inverter is a logic 0, the upper totem pole transistor of the inverter turns ON. Now, there is no current path through the LED and it remains dark. In this way the LED monitors the logic level at the inverter input, and the inverter is used as a LED driver.

Your application sounds like a good place for a Schmitt trigger . A Schmitt trigger will not turn on unless the input voltage is greater than a certain voltage called the "positive-going threshold voltage", and will not turn off unless the input voltage is less than another voltage called the "negative-going threshold voltage." The positive going threshold voltage is greater than the negative-going threshold voltage and the difference between the two is called hysteresis. This hysteresis effect gives a Schmitt trigger the ability to square up slow and jagged waveforms. There are three Schmitt trigger integrated circuits (ICs) available in TTL; the 7413 dual 4-input NAND gate, the 7414 hex Schmitt trigger inverters, and the 74132 quad 2-input NAND gate. For all these gates the typical "positive-going threshold voltage" is 1.7 V and the "negative-going threshold" is 0.9 V with the 7413 being the most popular and readily available Schmitt Trigger IC.

Since you're not completely specific about input parameters I'm passing along two examples for using the 7413 given above where the output can be an LED. Hopefully, you can tailor these ideas for your own application. The first example is a THRESHOLD DETECTOR and assumes that a 1.8 V, 1MHz sine wave is applied to produce an output pulse if the input exceeds 1.7 V. This solution merely compares how long the output last if the input is: 1) a TTL 7404 INVERTER whose output changes when the input crosses 1.7 V, and 2) a 7413 Schmitt Trigger whose "positive-going threshold voltage" is 1.7 V and "negative-going threshold voltage" is 0.9 V. Remember that by tying multiple inputs together on a NAND gate one effectively forms an INVERTER.

The 7404 gate turns ON and OFF at an electrical angle such that the angle THETA equals the sine whose angle THETA is 1.7 V divided by 1.8 V or 70.8 degrees (turn ON) and 180 degrees minus 70.8 degrees or 109.2 degrees (turn OFF). Thus, the output is ON for the quantity of 109.2 degrees minus 70.8 degrees divided by 360 degrees or 0.107 of a cycle. Since a cycle takes 1 microsecond (the reciprocal of the frequency), the output pulse will be 107 nanoseconds long.

The Schmitt trigger also turns ON at 70.8 degrees, but does not turn OFF until the quantity of 180 degrees MINUS the sine whose angle THETA is 0.9 V divided by 1.8 V is 180 degrees minus 30 degrees or 150 degrees. Hence, the Schmitt trigger is ON for 79.2 degrees out of 360 or 220 nanoseconds. Clearly, the Schmitt trigger improves the THRESHOLD DETECTOR by delivering a longer output pulse.

My second example uses a 120 V, 60 Hz generator feeding a 7413 Schmitt trigger that drives an LED. In a practical circuit, the LED may be a visual indicator monitoring commercial power (i.e., when power is present the LED is ON). The absence of LED drive would then be an early warning indicator showing that the power has failed.

The first part of this design limits the input signal between 0 and 5V so that the maximum value for a HIGH state is not exceeded. A step-down transformer having a peak output voltage of 10 volts at the secondary winding is selected. When the secondary voltage rises above 5 V, a first diode arrangement turns ON to CLIP the voltage to the 7413 input at 5 V. A 1 k-ohm resistor connected between the secondary winding and the diode clipper prevents excessive current from passing through the diode. Conversely, when the secondary voltage is negative, a second diode arrangement turns ON CLAMPING the 7413 input to ground. Notice, that I've used classical semiconductor-diode clamping and clipping techniques to protect the 7413. In this manner, the diode circuits hold the input voltage between ground and a plus 5 V.

Since the transformer output at the secondary winding is  $V = 10 \sin 377t$  (where 377 equals  $2\pi$  times  $F$  for a 60 cycle sine wave), the maximum rate of change ( $dv/dt$ ) at the 7413 input equals  $3770 \cos 377t$ . This is too slow for "edge-triggered" flip-flops and one-shots in the TTL family, but the 7413 Schmitt trigger accepts this input and produces a TTL output that is a square wave at 60 HZ.

While I've focused on digital examples please bear in mind that you can use an Op-Amp comparator with hysteresis added thereto and hopefully accomplish what you want to do. Since this explanation is long, I'll just suggest that you consult appropriate applications given in any of the linear circuit data-books provided by their respective manufacturers.

Once again, I hope this helps you out.

John Freiburger III - WA2NZO  
Macedon, NY

----- Original Message -----

From: Greg Weinfurtner <weinfurt@oak.cats.ohiou.edu>  
To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>  
Sent: Monday, December 06, 1999 3:49 AM  
Subject: Re: circuit help needed -brain not working

> >I need to have an LED light when the voltage across a resistor is  
> >above 2.5 to 3 V, but not be lit when the voltage is at 1.7 V.  
> >  
> >What do I need here?  
> >  
> >73, doug  
> >  
> Doug,  
> Put any silicon diode in series with the LED. Since the diodes  
> have voltage drops of about .6 v before conduction, it seems you'll only  
> need one or two of them.  
> >  
> >  
> Happy Trails!  
> >  
> NS80 Greg  
> >  
> >  
> >

-----  
Date: Mon, 6 Dec 1999 17:36:22 EST  
From: NCC3122B@aol.com  
To: qrp-1@lehigh.edu  
Subject: [57469] RS Satellites  
Message-ID: <0.3e77c724.257d9466@aol.com>  
MIME-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Content-Transfer-Encoding: 7bit

Anyone currently active on the RS Satellites please email me! I need some help getting started.

Jerry - NR5A  
NCC3122B@AOL.COM

-----  
Date: Mon, 6 Dec 1999 21:28:40 +0000  
From: Larry Cahoon <wd3p@juno.com>  
To: n2tpa@juno.com, qrp-1@Lehigh.EDU  
Subject: [57470] Re: CONTEST: Electronic submission question  
Message-ID: <19991206.231906.4374.0.wd3p@juno.com>

On Mon, 6 Dec 1999 10:00:17 -0500 Bill B Lazure <n2tpa@juno.com> writes:  
>Gang,

>  
> I tried to send my Sweeps log electronically this year. When I  
>mailed it off as an attachment, I sent myself a copy to make sure that

I don't know about netscape e-mail but if it got to ARRL you should have gotten a confirmation e-mail back from them. If you didn't get it then assume they do not have your log.

If all else fails you can copy the files to disk and send it to them.

73 de Larry.....WD3P in MD

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Date: Mon, 6 Dec 1999 16:34:54 -0700  
From: "Mike Newbold" <newbold@cmn.net>  
To: <qrp-l@Lehigh.EDU>  
Subject: [57471] FS: Sierra and NC-20  
Message-ID: <199912062329.QAA24669@cmn.net>  
MIME-Version: 1.0  
Content-Type: text/plain; charset=ISO-8859-1  
Content-Transfer-Encoding: 7bit

Wilderness Sierra: \$350

Mint, comes with 20 and 40 band modules, KC2 keyer, counter, s meter, watt meter, custom panel, and manual. Stock, no mods.

Nor Cal 20: \$135

Many Mods, including ten turn pot, TIC keyer, no chirp, ALC improvements. Very custom. I have a JPG if interested.

Both rigs work and perform well. I'm thinking about a K2.

contact

Mike Newbold K0Y0

newbold@cmn.net

Oak Creek, Co. 80467

970) 736-2660

-----  
Date: Mon, 6 Dec 1999 18:45:21 EST

From: NB6M@aol.com

To: qrp-L@lehigh.edu

Subject: [57472] Re: feeding dipoles with ladderline... also some tuner thoughts & questions

Message-ID: <0.eae9c828.257da491@aol.com>

MIME-Version: 1.0

Content-Type: text/plain; charset="us-ascii"

Content-Transfer-Encoding: 7bit

Well, theoretical concerns aside, I am using an 80 meter inverted vee dipole, with 450 Ohm ladder line connected directly to the dipole, and running the ladderline at an angle out away from my 50' pipe mast, leading it in underneath the edge of my roof, and to the back of my MFJ-971 tuner.

The total length of the ladderline feeder ended up being about 94+ or - feet, due to the way it had to be run, and I ran it from the top of the mast down at an angle away from the mast to the edge of my roof so as to keep the ladderline away from the metal mast.

The MFJ-971 tuner is equipped with a balun so that the ladderline can be

hooked directly to it, and there is about three feet or so of RG-8X between that and my rig.

I am able to tune all bands from 80 through 12 meters with no trouble, and have worked quite a bit of DX running QRP, including working SM3PZG while running 1 watt on 20 meters.

I am not able to tune 10 meters with this setup, but believe I will be able to do so by installing an 8' 3" counterpoise (wire) on the ground connection of my tuner. This has been suggested by others who have used the ladderline fed dipole system.

I have been using this system since June of this year, and compared to the parallel dipole system I used to use on this same mast, which was coax fed, I like this system much better, and feel that I am getting at least as good results with it, if not better because the dipole portion is a correspondingly longer radiating element the higher in frequency I go.

So I would say don't be overly concerned about the theoretical concerns, except that I do feel it is a good idea to run the ladderline away from any metal type of center support, if there is one. Other than that, put it up and enjoy, it will work quite well on many bands. I haven't tried connecting the two wires from the ladder line together and tuning the system against ground in order to work 160, but have plans to do so in the near future.

Good Luck.

Wayne, NB6M

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End of QRP-L Digest 1661

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